# KALMIOPSIS

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Oregon Grape *(Berberis aquifolium)*

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# KALMIOPSIS

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## EDITORIAL

I hope that you find this issue of *Kalmiopsis* worth the wait. For many years, Frank Lang has been sleuthing the life of John Jeffrey, the young Scotsman who discovered Jeffrey and foxtail pines, McNab cypress, and azure penstemon. Here, for the first time, he reveals the remarkable correspondence surrounding Jeffrey's mysterious disappearance in 1854. See if you share his suspicions, or derive a conclusion of your own of "poor Jeffrey's fate." The next article jumps abruptly ahead to the digital age: Bob Korfhage shares his photography expertise for improving your wildflower images. I'm looking forward to publishing magnificent plant photos in future *Kalmiopsis* issues when NPSO members implement his suggestions in the field. Mariana Bornholdt's biography of gentleman-botanist-adventurer Martin Gorman is a perfect complement to NPSO Occasional Paper No. 3 (Rare Plants and Vile Weeds: urbanizing flora of Portland, Oregon, 1806-2006), scheduled for publication this year. Gorman's plant surveys provided the foundation for assessing changes in Portland's flora over the past 200 years. In this last year of the Lewis and Clark celebration, the Plant of the Year series brings us Oregon grape, our state flower. Sit back, put your feet up, and take some time to enjoy these stories related to Oregon's native flora!

Jeffrey pine cones, near type location in the Shasta Valley, California
Photo by Frank Lang

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COVER PHOTO: Oregon Grape *(Berberis aquifolium)*. Photo by Bob Vos, 342 Carmen Rd., Talent, OR 97540. June 2006

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# John Jeffrey in the Wild West: Speculations on his Life and Times (1828-1854?)

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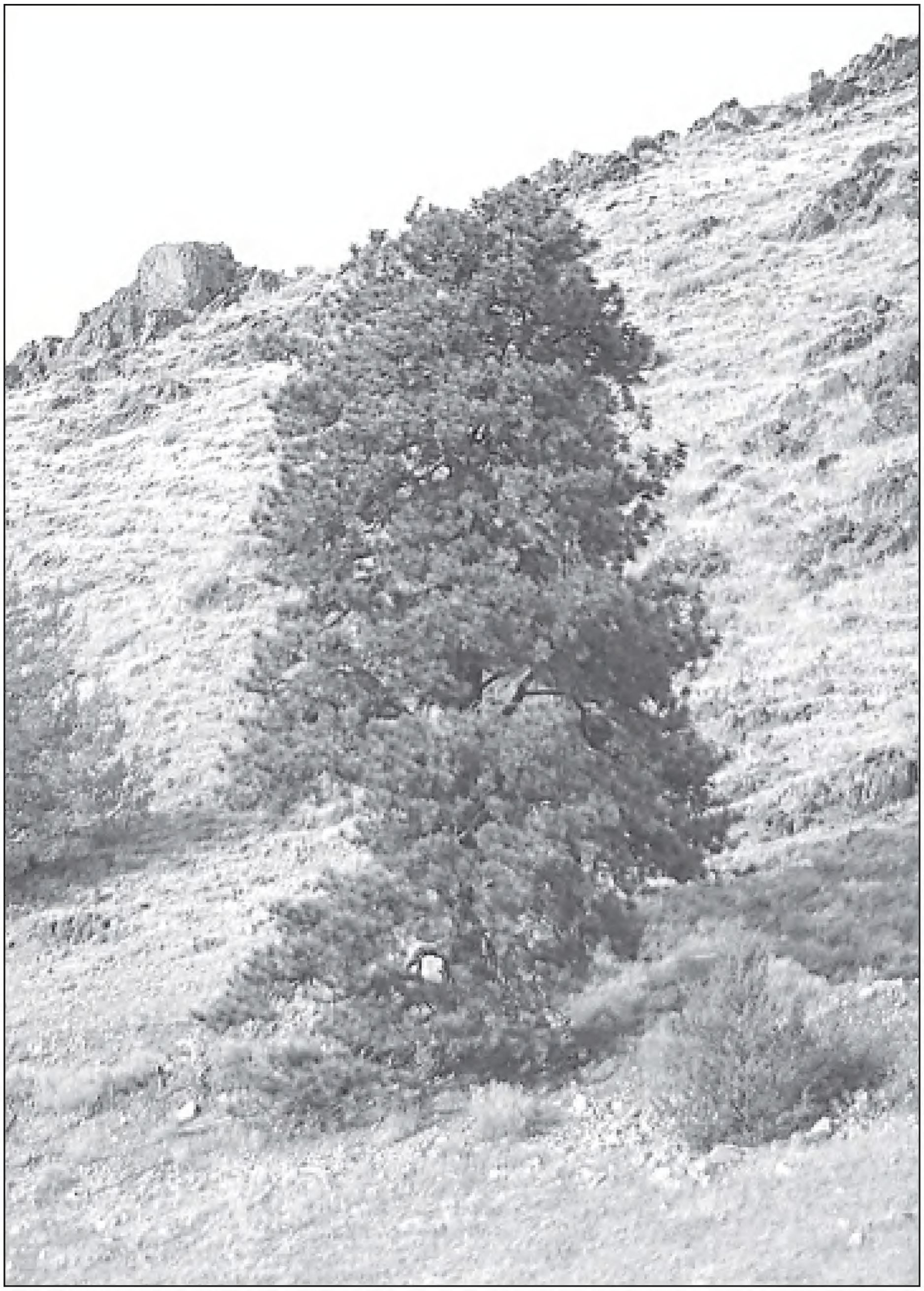
(Adapted from an essay that will appear in Plant Hunters of the Pacific Northwest, edited by A.R. Kruckeberg and R. M. Love)



Jeffrey pine (*Pinus jeffreyi*) in the Shasta Valley near the Oregon to California Trail, Siskiyou County, California. Photo by Frank Lang.

Among plant hunters of the Northwest, John Jeffrey was like a shooting star, a quick twinkle soon extinguished. In 1850, Jeffrey was selected by a group of Scottish botanists and horticulturalists to seek new and unusual species overlooked by David Douglas and Archibald Menzies decades earlier. Among his best-known discoveries are Jeffrey pine (*Pinus jeffreyi*), tall mountain shooting-star (*Dodecatheon jeffreyi*) and foxtail pine (*Pinus balfouriana*). However, with a few exceptions, botanical treasures were few and far between, and his collecting efforts disappointed his sponsors. Then he disappeared. He was last seen in San Francisco in 1854; no one knows what happened to him.

Of David Douglas's travels in North America, we know where he was, what he did, when he did it, and who his companions were. We know all this because Douglas carefully documented his activities in a detailed diary, sent letters home, and wrote and reflected on his adventures on his return to Britain. Of John Jeffrey's travels, we know much less. Jeffrey's diary, required as a condition of his employment, has never been found, if it were ever kept. What we know of his time in North America is pieced together from the accounts of others who met and dealt with him and from the few letters and specimens that reached Scotland. His itinerary has been reconstructed from Hudson's Bay Company (HBC) records and by noting when and where his specimens were collected (after accounting for conflicting and incomplete dates). Numerous accounts of Jeffrey's life, death, and travels in western North America have been written (see sidebar). For this biography, I relied on these sources, particularly Johnstone (1939), but also examined archival materials on two brief visits to Royal Botanic Garden, Edinburgh (RBGE). [Correspondence from RBGE will not be cited in the bibliography, but indicated in the text by (RBGE).] Access to the mostly handwritten correspondence relating to Jeffrey and the Oregon Association greatly improved sometime between 1894 and 1917 (L. Patterson, pers. comm.) when Isaac Bayley Balfour likely had the correspondence transcribed from hand to typewritten form in preparation for Balfour's hope "to be able to publish as full as story as it is now possible to give of this Oregon Expedition (Letter to J. Douglas)." Regrettably, Balfour's account was never published.

In this biography, I speculate on Jeffrey's performance and fate, based on materials and observations not previously presented, and offer tentative evidence that may answer some of the questions raised by other authors. Why was his performance so uneven? How did his sponsors react to his performance? What might have happened to Jeffrey, contrary to existing stories about his disappearance? Was he really in San Francisco more than once and then only for a day?

## The Oregon Association: Searching for horticultural "gold" in the New World

John Hutton (Woody Fibre) Balfour about 1855, a year after the disappearance of John Jeffrey. An original force in organizing the Oregon Expedition. Portrait courtesy of the Royal Botanic Garden, Edinburgh.

The accounts by David Douglas and other travelers of the magnificent western North American conifers led George Patton to believe that it would be possible to raise funds to send a collector to explore the region more fully. At the behest of George Patton (Lord Glenalmond), a meeting of "gentlemen interested in the promotion of Arboriculture and Horticulture" was held at the Royal Botanic Garden, Edinburgh, 22 November 1849. The purpose of the meeting was to consider mounting an expedition to the American Pacific Northwest to search primarily for new conifers and send their seeds back to Scotland. Professor John Hutton Balfour, professor of botany, Keeper of the Royal Botanic Garden, the founder of the Botanical Society of Edinburgh and Queen's Botanist for Scotland, chaired the meeting. At that meeting Balfour ("Woody Fibre," as he was known to generations of Edinburgh botany students) indicated that he had someone in mind who could do the job of following in David Douglas' footsteps. Those present decided to proceed with the enterprise.

On 30 January 1850 a committee of 13 was appointed that included James McNab, Andrew Murray, as a joint Secretary, George Patton, and Professor Balfour as Chairman. Andrew

### Jeffrey's Biographers

Edward Ravenscroft (1884) offers one of the first published accounts of Jeffrey in North America in his treatise on pines cultivated in Great Britain. After a brief synopsis of Jeffrey's collections and accomplishments, Ravenscroft states, "what became of Jeffrey afterwards is not known." Ravenscroft's account seems based on available information from correspondence at RBGE and Hudson's Bay Company accounts and offers little not reported from other, later sources.

Frederick V. Coville's (1897) early account of Jeffrey's collecting trip to North America compiled an itinerary based on eleven circulars sent to the subscribers of the Oregon Botanical Association who financed the expedition.

Isaac Bayley Balfour, the Regis Keeper of the Royal Botanic Garden Edinburgh (RBGE) from 1888 to 1922, wrote a letter (RBGE) to Robert Douglas, Secretary of the Geographic Board Canada from 1916 to 1930, summarizing Jeffrey's itinerary in North America. Isaac Bayley was the son of John Hutton Balfour, founder of the Edinburgh Botanical Society and a principle in the group who sent Jeffrey to North America.

James Todd Johnstone, Librarian at RBGE, summarized most of what is known about John Jeffrey and his botanical work in North America and the Oregon Botanical Association of Scottish and British horticulturists and botanists who sent him off on the Oregon Expedition (Johnstone 1939). Johnstone had access to the documents of the Association and most of Jeffrey's surviving specimens. The documents and specimens are at the Royal Botanical Garden, Edinburgh. His paper includes an extensive plant list. In identifying the plants Johnstone consulted several western North American botanical authorities of the time: Professor John Davidson of the University of British Columbia, Mr. Lincoln Savage of southern Oregon and Professor Albert Sweetser of the University of Oregon. The list reflects the botanical nomenclature in use at the time of Johnstone's compilation in 1939.

A. G. Harvey (1946) adds little new to what we know of Jeffrey's journey, but he does point out the magnitude of Jeffrey's contributions to our knowledge of the western North American flora. Erwin F. Lange (1967) reiterates much of the previous work but adds some detail from letters and circulars of the Association. P. and J. Woods (2003) discuss Jeffrey's conifer contributions to horticulture. They provide background information on Jeffrey and the Oregon Association, the contents of the boxes sent back by Jeffrey, and general reflections on the expedition. Ann Lindsay's (2005) discussion offers considerable insight into the environment of Jeffrey's youth in rural Scotland and offers a readable standard account of Jeffrey in North America.

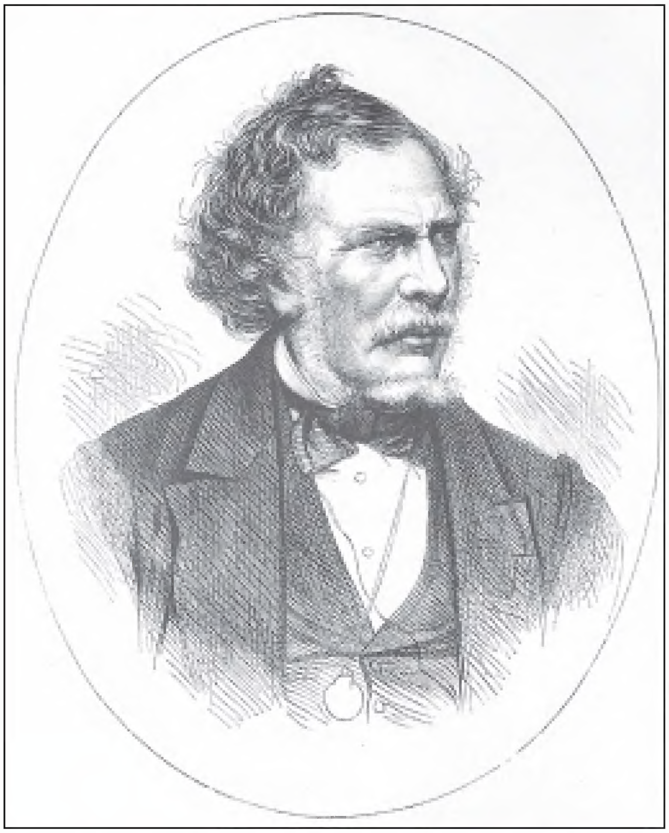
Murray (1812-1878) was an entomologist with strong interests in horticulture and botany. William Murray, Andrew's brother, was in San Francisco in 1854. As you will see, the brothers exchanged interesting correspondence concerning Jeffrey's stay in the city by the bay.

## Jeffrey's appointment as collector

In February, the committee advertised for subscribers who bought shares in the expedition that entitled then to a proportion of the seeds and plant materials that made it back to Great Britain alive. At this time, the committee discussed the qualifications of the collector. On the recommendation of Balfour, McNab, and Dr. Neill, the assembled empowered McNab to inform Jeffrey that he was chosen as collector.

At the request of the Association, the Hudson's Bay Company generously offered to provide passage on one of their ships from Britain to their post at York Factory on the western shore of Hudson's Bay. The Company would guide the plant collector to their outposts on the Pacific, supply all needs, and advance him money to the amount granted by the Association should he go beyond their territory. The Association arranged for the 24-year-old Jeffrey to learn how to take measurements of longitude, latitude, and altitude and purchased an outfit of clothes and the proper instruments.

At the 22 May 1850 meeting of the Association Jeffery was given a list of 32 complete instructions for his trip. He was to



James McNab, Head Gardener at the Royal Botanic Garden Edinburgh, was instrumental in selecting Jeffrey as the Oregon Expedition botanist. Engraving courtesy of the Royal Botanic Garden Edinburgh and the Gardener's Chronicle (1878).

### The Oregon Association Expedition to Western North America

A cast of major characters:

**THE OREGON ASSOCIATION:** a group of eminent, influential Britons interested in send a handpicked collector to bring back plants just for Scottish landowners (Lindsay 2005).

**John Jeffrey**, the chosen collector, a twenty-something Scot from Clunie, Perthshire, Scotland.

**James McNab**, Principle Gardener, Royal Botanic Garden, Edinburgh, Association Co-secretary, responsible for Jeffrey's selection

**George Patton** (Lord Glenalmond), the expedition was his idea

**John Hutton Balfour**, Keeper of the Royal Botanic Garden, Edinburgh, Oregon Association Chairman, his son,

**Sir Isaac Bayley Balfour**, succeeded his father as Regis Keeper of RBGE, and carefully looked after Oregon Expedition matters for years afterwards.

**Andrew Murray**, entomologist, Association Co-secretary

**William Murray**, brother of Andrew in San Francisco at the expedition's end

**W. Gibson Craig**, Association member upset by financial arrangements

**William Evans,** Association member who reports Jeffrey in Sacramento in 1852

**HUDSON BAY COMPANY** personnel acquainted with Jeffrey

**James Hector**, a Jeffrey character reference, who had never meet him.

**Alexander Caulfield Anderson**, accompanied Jeffrey from Fort Colville to Fort Victoria.

**James R. Anderson**, young son of A. C. Anderson, who spent time with Jeffrey as a boy at Fort Victoria.

**Peter Skeene Ogden**, long time HBC employee, reported Jeffrey in Crescent City, CA.

**James Douglas**, Factor at Fort Victoria

**John Ballenden**, Chief Factor at Fort Vancouver, travel companion of Jeffrey and host the winter of 1852-53.

**Dr. William Tolmie Fraser**, Chief Factor, Fort Nisqually

**EXPRESS COMPANIES**

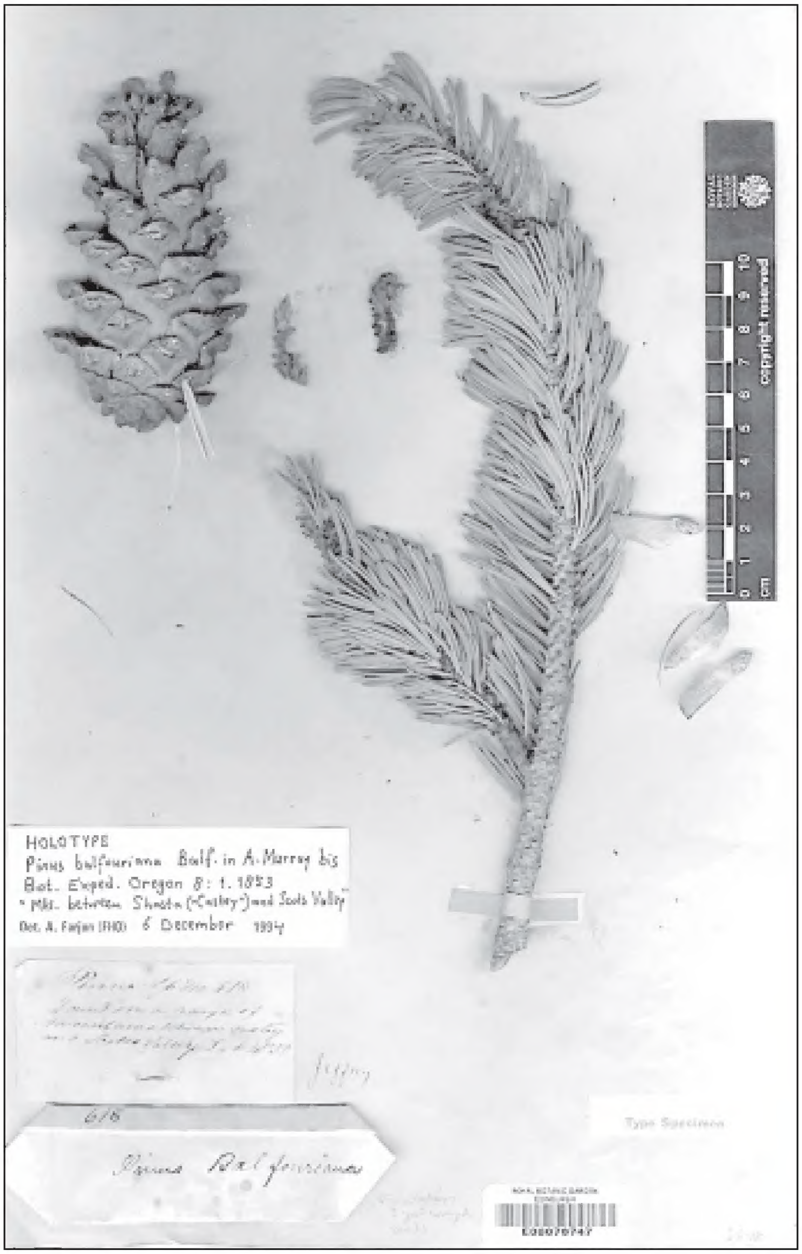
**Adams & Company - San Diego:** a subsidiary, Adams Express Company, was organized in 1850, failed in 1854. Shipped some of Jeffrey's packages to Scotland.

**McKinlay, Garroich & Co:** San Francisco shipping and mercantile company that handled the transport of Jeffrey's goods to San Diego.

**Page, Bacon & Co:** San Francisco Bank that may have cashed Jeffrey's draft.

keep a daybook of his activities in duplicate. Jeffrey was to keep one copy; the other copy was to be sent back to Scotland at each opportunity. Item 13 gave Jeffrey considerable liberty as to where he could go based on local circumstances: "They leave you broad discretion and power to follow that course which you may consider the most likely to forward the objects of the expedition." Other instructions emphasized keeping the committee informed of his activities.

Balfour arranged with the Hudson's Bay Company to advance Jeffery funds to carry out his mission. Whatever the arrangements were, Balfour and the Association came to regret them later. Apparently, Hudson's Bay Company was not given a limit as to the amount of money that could be given to Jeffrey. Jeffrey stated he was quite satisfied with the arrangements Balfour made for money matters.


copyright reserved
cm 0 1 2 3 4 5 6 7 8 9 10
HOLOTYPE
Pinus balfouriana Balf. in A. Murray bis
Bot. Exped. Oregon 8: 1. 1853
* Mts. between Shasta ("Castley") and Scots Valley
Det. A. Farjon (K) 6 December 1994
Jeffrey
616
Pinus Balfouriana
Type Specimen

Foxtail pine type specimen collected by John Jeffrey near Mt. Shasta in 1852. Courtesy Royal Botanic Garden, Edinburgh.

Jeffrey should have been satisfied. W. Gibson Craig, in a letter to the Committee Treasurer dated 8 June 1850, expressed his amazement that the committee sent Jeffrey off to "the remotest and most inaccessible parts of the world, without making any arrangement whatever how he was to be supplied with money is the most extraordinary proceeding I have ever heard of." Because of this, Jeffrey had no limits as to the amount the Hudson's Bay Company could advance him or for what purpose. In a postscript to Craig's letter of 7 November 1850 he writes "Jeffrey himself has not the slightest idea what Funds are to be at his disposal, or what expenses he may properly incur. This is entirely omitted in his instructions, and the Committee should give him generally their views on the subject." As far as I can determine, Jeffrey was able to obtain funds from the Hudson's Bay Company and others without constraint.

On 20 March 1850, the Minute Book of the Association recorded that an offer by the Colonial Life Assurance Company to insure Jeffrey's life was laid before the meeting and the offer was accepted. On 22 March 1850, the Association paid three pounds ten shillings and eight pence to insure the life of Jeffrey for £400. The policy expired 13 March 1854 without a claim being made upon it. (Kate Hutcheson, Standard Life Assurance Company, pers. comm. 1998).

## Tracking John Jeffrey's travels in North America

Johnstone's 1939 treatment listed Jeffrey's collections in alphabetical order by family, arranged in the order of Bentham and Hooker's Genera Plantarum. Many of the collections are numbered with gaps in the sequence that Johnstone attributes to specimens that Jeffrey collected and shipped, but did not arrive in Scotland, or were otherwise lost. Other specimens were unnumbered, "Sine no.," in Johnstone's list. Some of these, according to Johnstone, were "no doubt" those sent home with his books and instruments in 1854. When I entered Johnstone's list in a spreadsheet and sorted by date, a revealing pattern emerged that grouped the species collected at each locality, and helped clarify Jeffrey's itinerary.

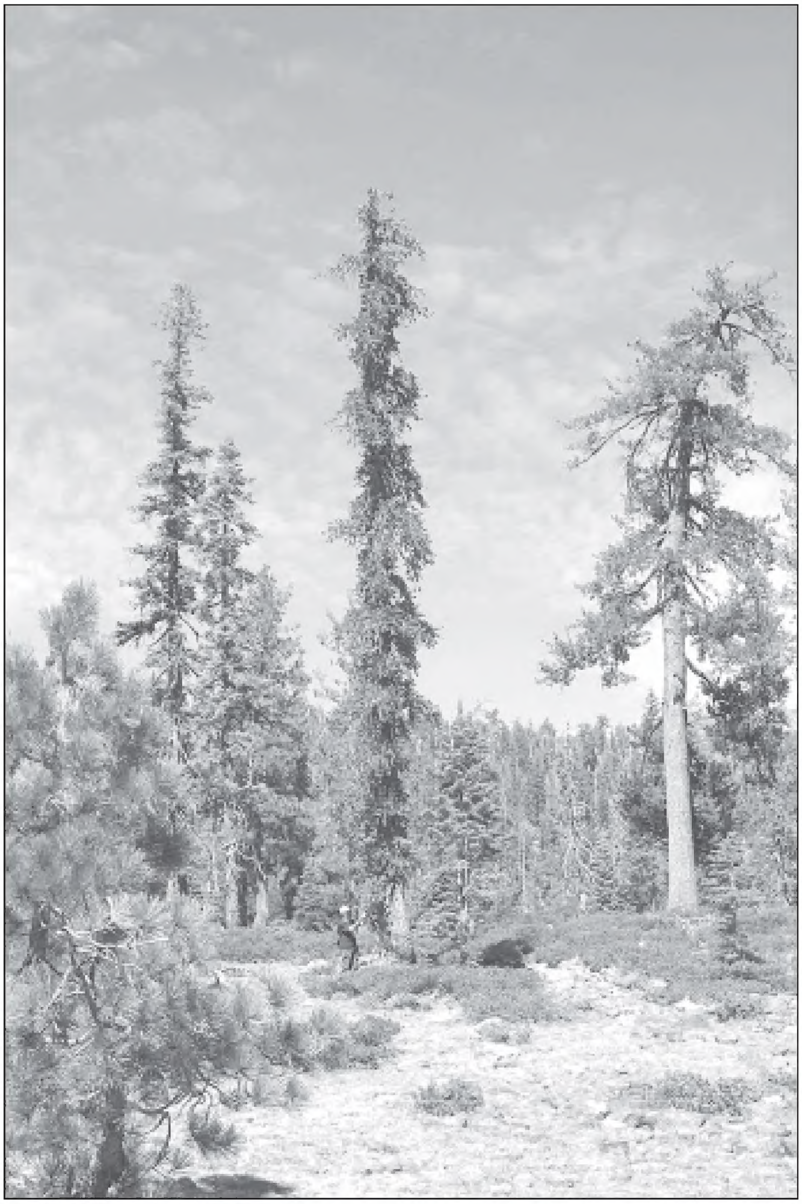
Conflicting and incomplete dates make an accurate accounting of his travels difficult, as well as collecting dates that seem improbable in terms of time and distance. For example, his collections of 2 July 1853 are from the Coast Mountains and the Sierra Nevada on the same day. Possibilities include: 1) report is correct and travel time was much faster than I imagine; 2) Jeffrey (or someone else) made an error in recording dates; 3) data are correct because Jeffrey had others help him by collecting at different locations (There is no direct evidence for the latter, but it is a possibility); finally, 4) Jeffrey was near the northern end of the Sacramento Valley and his "Sierra Nevada collections" were from the southern reaches on the Cascades toward Mount Lassen.

Other problems include incomplete dates. His collections from

"Shasta Butte," (present-day Mt. Shasta) bearing only the year 1852 were undoubtedly collected when he was in Siskiyou County in the fall of 1852. A greater mystery is the suite of specimens that are simply labeled "Oregon 1852-1853," discussed further below. A more complete picture of his comings and goings in the area might have been possible with complete collection information.

**York Factory to Fort Victoria (12 August 1850 - October 1851)** Johnstone (1939) and other authors give a complete accounting of his travels as far as could be assessed. Jeffrey arrived at York Factory on 12 August 1850 and left on 23 August, traveling across Canada and eventually reaching Edmonton House where he stayed until March 1851. Then he went on to Jasper House where he remained until the end of April when he proceeded to Fort Colville. From there, he collected in the Okanogan and returned to Fort Colville. His trail of collections indicate that he eventually made his way to Vancouver Island, then went back to the mainland: the Fraser River, Mount Baker, and places in between.

**Fort Victoria (October 1851 - May 1852).** Jeffrey spent the winter of 1851-52 at Fort Victoria and environs. During that winter, he sailed on the HBC's *Beaver* to Fort Rupert on the northern end of Vancouver Island. Winter and spring, he collected twice in the San Juan Islands. While at Fort Victoria, Jeffrey became friendly with John Ballenden, who, in other correspondence, spoke most highly of Jeffrey and explained his account of Jeffrey's mysterious end.



Foxtail pine near Bull Lake west of China Mountain, Siskiyou County, California. Photo by Frank Lang.

## The first trip south

**Fort Nisqually (May - June 18, 1852).** Jeffrey traveled south to Fort Vancouver via Puget Sound and Fort Nisqually. On 21 May, James Douglas, Factor at Fort Victoria, wrote to Dr. William Fraser Tolmie, Factor at Fort Nisqually, telling him Mr. Jephreys, Esq're [*sic*] was proceeding on "his professional pursuits to Fort Vancouver" and would visit Fort Nisqually on his way "thither." Tolmie was authorized to furnish any supplies and information Jeffrey may require to help him on his journey to Fort Vancouver. Apparently, Jeffrey carried this letter with him, based on Douglas' opening sentence: "I forward this communication by John Jephreys [*sic*] …."

On June 15, the Fort Nisqually Journal of Occurrences (Dickey 1993) reports that Ballenden arrived at Fort Nisqually from Fort Victoria late in the evening. On the 18th the journal reports, "This morning Dr. Tolmie accompanied by Mr. Ballenden and Mr. Jeffreys [*sic*] started for Vancouver."

**Fort Vancouver (June 18-20).** Jeffrey's time at Fort Vancouver was brief, just long enough to prepare to leave. He left Fort Vancouver on 20 June 1852 traveling by land to California via the Willamette Valley, Oregon City and the Umpqua Country.

Wm. W. Evans (28 January 1853) letter to Andrew Murray or John Balfour quoted a letter from a Mr. Charles' son (23 July 1852) that might shed some light on Jeffrey's travel plans. "Almost the first person I saw there [Ft. Vancouver] was Mr Jeffry [*sic*] the botanist who was staying for about three weeks at this place; he has been at Vancouver's Island and other posts of the Company's and started from here three days ago, going on horseback by Oregon City up the country to California. It is his intention to return home by Mexico if he can manage it." Mr. Charles' son suggested trying to contact John Ballenden, the Chief Factor at Fort Vancouver, for more information about Jeffrey.

**Willamette Valley, Cascade Mountains and Umpqua Valley (July 1-August 29).** His next collection, on 1 July 1852, was labeled "Willamette." On 4 July, he collected in the Cascade Mountains and in the Willamette Valley. Jeffrey made 13 collections in the Umpqua Valley and the Cascade Range, although there was one collection on 26 July from the Willamette Valley. In the Cascades, he found *Arctostaphylos nevadensis* at 7,000 ft. near the snow line at 43° North Latitude.

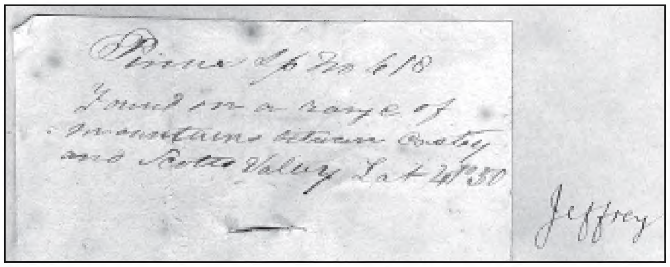
**Northern California, Shasta Valley, and Shasta Butte (September 3-October 29, 1852).** Jeffrey's time in the vicinity of Mount Shasta (his Shasta Butte) in present-day Siskiyou County, California, was perhaps his most fruitful time in North America. He collected 32 species from various locations, including the type specimens for *Pinus balfouriana*, Jeffrey pine (*Pinus jeffreyi*), Sierra lodgepole pine (*Pinus contorta* var. *murrayana*), and the alpine eriogonum (*Eriogonum pyrolaefolium*) sometimes referred to as the hairy Shasta wild buckwheat (E. p. var. *coryphaeum*).

On 11 September, Jeffrey reported ponderosa pine (*Pinus ponderosa*) [no specimen seen, seeds received, Johnstone 1939] from the Rose River Valley which is probably an old name for the Little Shasta River in Siskiyou County. While in Siskiyou County he collected knobcone pine (*Pinus attenuata*) in Salmon River Mountains and western white pine (*Pinus monticola*) in the Trinity Mountains, making only one collection at each place. Not a good use of time, considering the distance traveled. His last collection was incense cedar (*Calocedrus decurrens*) on 29 October 1852 along the "Scott River on dry sandy soil." There were no more collections until December 1852.

**Return to Fort Vancouver (October 1852- April 1853).** Jeffrey rejoined John Ballenden at Fort Vancouver on or about the 3rd of December 1852 and remained with him until he (Ballenden) left for Britain, 24 March 1853 (RBGE). On 4 December 1852, Jeffrey was on Mt Jefferson where he collected lodgepole pine (*Pinus contorta*). Other authors assumed that between 29 October and 3 December Jeffrey slowly worked his way north from the Scott River to Fort Vancouver to spend the winter as guest of the HBC. As explained below, during November he was more likely far south of there, in the gold fields of California: Sacramento and San Francisco.

Jeffrey might have spent the winter working on his specimens in preparation for shipment back to Britain. He did not seem to have spent time collecting. And, it does not mean that Jeffrey spent all his time at Fort Vancouver.

Jeffrey wrote a short note to Balfour on 15 February 1853 from Columbia City concerning the shipping arrangements for Box 6 (via Panama and the Adams & Co. express) and field notes for the *Pinus* collection at Mt. Jefferson on 4 December 1853. (In 1853, Columbia City was briefly the name of the Oregon Territory post office near Fort Vancouver (Payne 1959) on the Washington side of the Columbia River.)


Pinus Sp No 618
Found in a range of
mountains between Shasty
and Scotts Valley Lat 41°30
Jeffrey

Label from the type specimen foxtail pine, *Pinus balfouriana*, named for John Hutton Balfour, founder of the Edinburgh Botanical Society and a principle in the group who sent Jeffrey to North America. (RBGE photo)

On 14 March 1853, Jeffrey wrote to Balfour from Oregon City "en route for the Rocky Mountains." After discussing the shipping route for several of the packages he was dispatching back to Britain, he wrote, "At present I am on the eve of starting for the Rocky Mountains by way of the south side of the Columbia River, on reaching the Mountain I will turn south and make for San Francisco." Apparently, he delayed his departure, because according to HBC records at Ft. Vancouver (RBGE), Jeffrey was paid $500 on 6 April 1853. It is thought that Jeffery left this day or shortly after to journey south.

## The final trip south

**Fort Vancouver to San Francisco (April -October 1853).** Jeffrey apparently took his time moving through the Willamette Valley without collecting. His first collections on the way south were in the Umpqua Valley starting 24 April 1853. He collected 55 different species between the 24 April and 3 May 1853. He was in the Rogue Valley collecting on 15 May 1853 (5 species) and in the Siskiyou Mountains on 23 May (12 species).

On 10 June he collected three members of the lily family at "Shasta" (Mount or Valley not stated). The next day, 11 June, at Clear Creek he made several collections including what is now know as the Azure penstemon (*Penstemon jeffreyanus* [*P. azureus*]) and Bolander's lily *(Lilium bolanderi*) in the Scott Mountains. This Clear Creek is most likely the tributary of McAdam Creek near Fort Jones in Scott Valley since he collected in the Scott Mountains the same day. This was very near the then-thriving town of Deadwood (Henryx and others 2003).

Seven days later on 18 June he collected chamise (*Adenostoma fasciculatum*) on Scott Mountain. From 26 June until 27 July 1853, an itinerary based on his collections becomes confused. On 1 July, he collected trumpet gooseberry (*Ribes leptanthum*) in the Coast Range. This must be a misidentification by Johnstone (1939) because The Jepson Manual does not record this plant from California. On 2 July, he collected rockfringe (*Epilobium obcordatum*) and western rhododendron (*Rhododendron californicum* [*R. macrophyllum*]) in the Coast Range and waxy-leaved (*Ceanothus foliosus*) and (*Styrax californicum* [*S. redivivus*]) in the Sierra Nevada. Chances are, he was far enough north to have been in the Cascade/Sierra Mountain interface. On 12 July, he was in the Sierra Nevada Mountains where he collected a single specimen, *Spiraea densiflora.* On 20 July, he collected *Polemonium carneum* on the Applegate River in southern Oregon, the 26th and 27th he collected *Calochortus venustus* and *Lilium bolanderi* in the California Coast Ranges.

By 1 August 1853, he was collecting near the summit of the Sierra Nevada Mountains and on the east flank of that range until the 8th. On 10 August, he collected *Hibiscus incanus* in the Sacramento Valley. His collection of western azalea (*Rhododendron occidentale*) on the south Umpqua on 11 August must be in error. There is no record of his activities until 3 September 1853 when he spent most of September until the 1st of October in the Sierra Nevada Mountains. We know that Jeffrey got as far south as Walker Pass in Kern County based on his collection there of lodgepole pine on 20 September 1853. On 1 October he collected what turned out to be the type specimen of *Cupressus macnabiana*, McNab Cypress, named in honor of James (with an *-iana* ending).

## John Jeffrey in San Francisco

Jeffrey apparently arrived in San Francisco in early October 1853, as he drew a bill on the Association for £200 on 7 October 1853 (Johnstone 1939). Balfour (RBGE) in a letter to R. Douglas reports Jeffrey in the Sierra Nevada until 1 October 1853, at Rio Americana [American River]. Johnstone (1939) reported that Jeffrey collected as late as 20 November 1853 on the Bay of San Francisco, although there seems to be no record of this collection in Johnstone's plant list.

There is the possibility that Jeffrey was in San Francisco three times: first, for a day, as reported by Ballenden (RBGE); a second time in November 1852, and a third time after his last trip south between April and October 1853. Some authors (F.V. Coville, 3 December 1919 letter to R. Douglas) consider the possibility of a one-day stay as unlikely. However, two possibilities speak to his presence in San Francisco prior to his final arrival in 1853.

First, his box Number 3 was mailed from San Francisco some time in 1852. The Oregon Association committee opened the box on 24 August 1852. Correspondence at RBGE between Balfour and the General Post Office is dated 23 August 1852 indicating that the box was posted earlier that year. Unfortunately, the exact mailing date is unknown. How could this have happened?

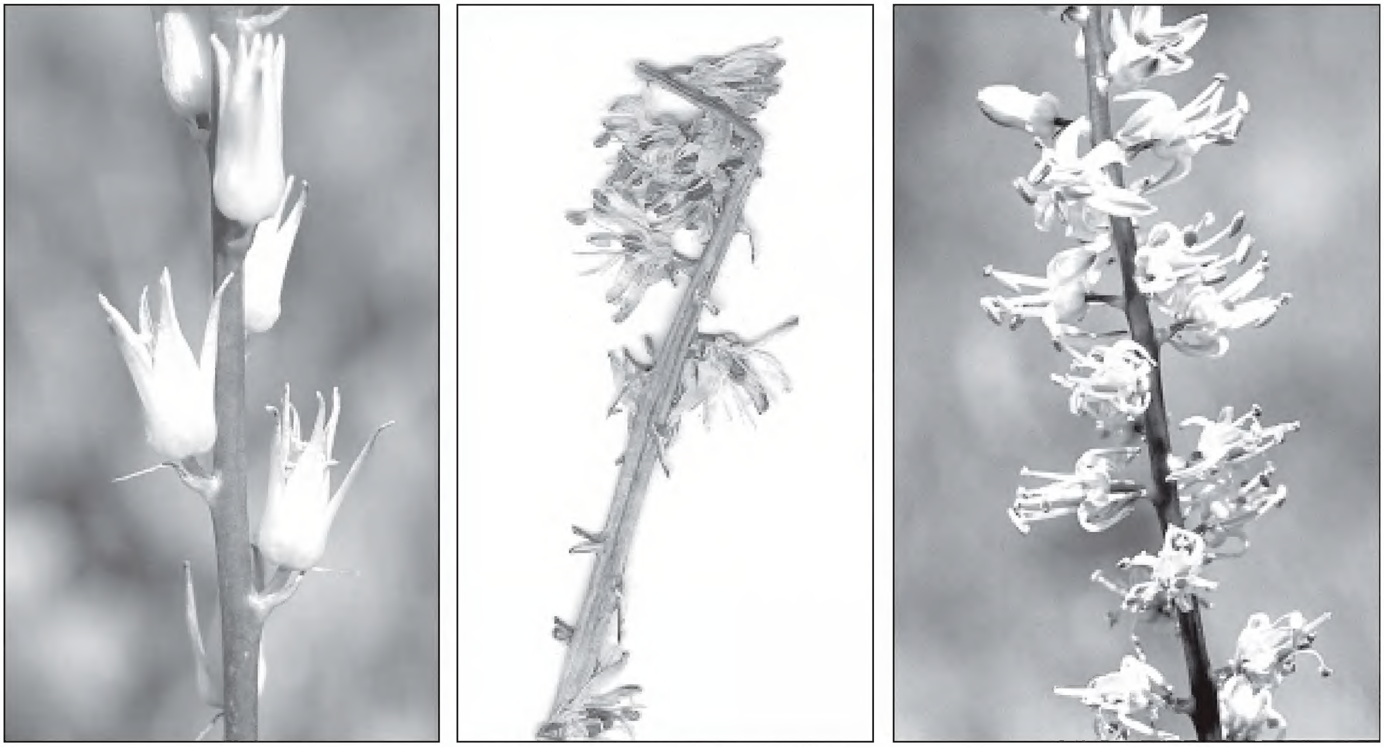
Peter Skene Ogden, Chief Factor of the HBC reported Jeffrey's presence in Crescent City in a letter to Andrew Murray 7 December 1853. Ogden wrote, "The last accounts we [HBC] had of him was from Crescent City a town on the coast to the South of the Umpqua River." According to Ogden, the Company had supplied Jeffrey with $500. (Jeffrey was probably paid in dollars or pound sterling depending the HBC facility was in British or US territory.)

If you assume that he had to have traveled by land then the possibility of a one-day stay seems remote. However, Jeffrey could have easily reached San Francisco by ship from Crescent City. If John Jeffrey were in San Francisco for a day, he might have got there via ship from Crescent City. In 1846, John Work wrote to his friend Edward Ermatinger that "A line of mail steamers is to commence running next spring from Panama to the Columbia River, touching at the intervening points along the coast and to carry the US Government mail monthly from New York to the Columbia."

What route could he have taken? One possibility is trail from the Rogue River Valley, through the Illinois Valley down the Smith River to Crescent City. Is there any evidence that he traveled that way? Among Jeffrey's collections, there is a suite of specimens (Johnstone 1939) simply labeled "Oregon Plants 1852-53." When I first sorted Johnstone's list I was positive that Jeffrey had been in the Illinois Valley. Among the plants Johnstone listed were *Darlingtonia californica*, *Polygala cornuta* (*P. californica*), *Rhamnus californica*, *Viola lobata*, and especially *Schoenolirion bracteosum*, now known as *Hastingsia bracteosa*.

*Hastingsia bracteosa* is known only from Darlingtonia fens in the Illinois Valley of southwestern Oregon. The plant was identified, incorrectly (as its synonym *Schoenolirion bracteosum*), about the time of Johnstone's work in 1939. The plant is *H. alba* s.l. (or its segregate *H. serpentinicola* Becking), a much more widespread taxon as seen by its recurved perianth parts and exposed stamens. Tracing unknown itineraries using the collection of narrow endemics is a good approach when it works. Unfortunately, it offers no help in the case of Jeffrey's travels.

Another possibility is when he finished collecting in northern California and his return to Fort Vancouver in 1852. Wm W.



Comparison of *Hastingsia* species. Left, *H. bracteosa*, Josephine County, Oregon (Lang photo); Center, Jeffrey's collection, Royal Botanic Garden Edinburgh (RBGE photo); Right, *H. alba*, Jackson County, Oregon. (Lang photo). Jeffrey's collection appears to be *H. alba*.

Evans, subscribing member of the Oregon Association, wrote Andrew Murray a letter (31 January 1853) quoting from a letter from the son of his acquaintance (Mr. Charles) dated 3 December 1852. The son wrote, "Jeffrey, the Botanist has just returned from California, he left Sacramento two days before it burned." Much of the business district was burned in the "great" Sacramento fire of 2 November 1852. If true, then Jeffrey did head south in 1852 and could have easily reached San Francisco from Sacramento by boat. A number of different cruise lines had daily or weekly steamer service between Sacramento and San Francisco as indicated by ads in the Daily Alta California of the time.

Various people in San Francisco were acquainted with Jeffrey, including shipping agents at McKinlay, Garroich & Company who sent his goods to points south (Fort Yuma, San Diego) and the "young Scotchman" mentioned in William Murray's letter below.

## The West that Jeffrey found

Jeffrey's 1850 Pacific Northwest was considerably different from that of David Douglas. Political issues concerning sovereignty over the area were settled with the British giving up all claims south of the 49th Parallel in 1846. In 1850, the Donation Land Act greatly accelerated settlement of the Oregon Territory. Though Jeffrey traveled with the help of the HBC, its influence over the region was not as great as it was in Douglas' time. Routes of travel were more firmly established between small European communities; settlements and settlers dotted the landscape. The route to California and its gold fields discovered in 1848, and though no freeway by any means, was now well used by settlers from the Willamette headed south to seek their fortunes. The 1850 census revealed that most of the European settlements were in the northern Willamette Valley. Settlements also appeared near Elkton and Roseburg in the Umpqua country. In southern Oregon, the communities of Ashland Mills (now Ashland) and Jacksonville were established in 1852. Shasta Butte City, now Yreka, California was a booming goldrush town in 1852 (Wells 1881) after gold was discovered in March 1851. Redick McKee, US Indian Agent at the time, wrote that the place had 300 homes, 1000 souls, and a town with plenty of provisions (Hendryx *et al.* 2003). Board was three dollars a day, without bed, and a dollar for horses and mules. Restaurants were San Francisco style, and "in the evenings music invited the lovers of liquor and Monte."

Spirits and similar beverages were apparently widely available throughout the region. For example, the Journal of Occurrences at Fort Nisqually for May 1852 reports on the 3rd, "Barnes away drinking," and on the 10th, "The plain Englishmen are reported to be drinking at Sastac."

The discovery of gold in southern Oregon at Jacksonville and Sailor Diggings in the Illinois Valley and in northern California in the Scott and Shasta Valleys brought thousands of miners and entrepreneurs. Crescent City became a boomtown in 1853. Goods and passengers moved with frequency between Crescent City, San Francisco, and Portland by sail and steamship. The trip from San Francisco was only a few relatively comfortable days. From Crescent City to the Illinois Valley, there was a constant stream of pack trains carrying supplies and people to and fro in the course of several days to the gold fields. Hundreds of pack animals moved along the trail each week, bearing staples such as bacon, hams, flour, coffee, sugar, blankets, nails, shovels, and many kegs of whiskey, in addition to passengers.

## The real John Jeffrey: Expert hardy traveler or incompetent do-nothing?

There is no picture of John Jeffrey in any form. This is in contrast to the sketches and portraits of David Douglas, who returned to England to make something of himself. Fame required pictures. Jeffrey did not return to Scotland and did not become famous during his lifetime. The most personal "picture" I can offer of Jeffrey is his signature (Fig. 3) taken from one of his letters to Andrew Murray (7 June 1850).

John Jeffrey

John Jeffrey's signature.

There are several accounts of Jeffrey's adult character. Ft. Vancouver Chief Factor Ballenden may have known Jeffrey as well as anyone in North America. On 1 February 1854 Ballenden wrote Andrew Murray, "So far as I saw no person could be more painstaking or indefatigable and notwithstanding what appears to me now inexplicable, I feel perfectly confident he will give full satisfaction to his employers." Jeffrey's shipping company, McKinlay & Garrioch, found him a "hardworking, enthusiastic, very steady and temperate man," as William Murray reported to brother Andrew (19 May 1854). Johnstone (1939) wrote that a Jas. [James] Hector wrote to J. H. Balfour (5 January1858) that "All who saw him say he proved a most expert and hardy traveler." This statement is based on "a gathering of gentlemen" together for the settling of New Year's Day accounts at Fort Edmonton. Hector simply reported the response of those present as to their recollection of Jeffrey. Hector had no first hand knowledge of Jeffrey, and his account of the HBC gathering may have been the basis of Ravenscroft's (1884) statement that the Company was anxious to secure his [Jeffrey's] services and that they [HBC] "took some trouble to find him out for that purpose, but with out success."

But then, there is another quote from Wm. Murray's letter (shown in full below) to his brother. Jeffrey apparently complained to his shipping agent, "he could do nothing on Vancouver Island on account of the brush-wood which is so thick as to be impenetrable except by cutting your way axe in hand, information which I quietly put into our own pipe for our private smoking."

The appraisal of Jeffrey's character is not consistent, but the explanation could be the easy availability of alcoholic beverages. On 1 July, three days before sailing for Hudson's Bay, Jeffrey penned a letter to Professor Balfour that might explain Jeffrey's lackluster performance as a plant collector. The letter is remarkable, not so much for its chatty contents, but for the gradual decay of handwriting from a clear crisp hand on page one to a loose sloppy, ink-blotted hand on page six. What could account for this? Not seasickness; he writes of a boisterous 9-day passage from Gravesend that left his fellow passengers sick, but not he. "I flatter myself that I am a good sailor." Seasickness apparently would not be a cause of his deteriorating handwriting. Another possibility is rum.

Jeffrey apparently had an active social life in the Orkneys. The locals looked forward to the arrival of the Northwest Ship, "...so that the whole country turns out and comes to see the Captain and the Ship." They "never failed" to invite him along with the Captain to see them. "I sometimes went," wrote Jeffrey.

When his itinerary in the Shasta Valley, organized by date, showing days without collection or apparent work, a modern reader, when asked, "What do you think?" said, "Drunkard."

## Jeffrey's exploration: Success or failure?

There is little question that Jeffrey's time in North America was both a success and a failure. This has been clearly pointed out by others, especially Woods and Woods (2003) and Harvey (1946), as well as Andrew Murray's 1860 judgment (Johnstone 1939) that it wasn't until the third year of his contact that "they [subscribers] had just reason to be dissatisfied with his conduct," and that it was "unjust so to term it [a failure]." Murray further wrote, "his collections do him no discredit, even when compared to theirs [Menzies and Douglas, earlier plant explorers in the region]." Jeffrey's collection of 119 species of seeds (Coates 1969) and over 400 plant specimens (Lange 1967) is some measure of his success.

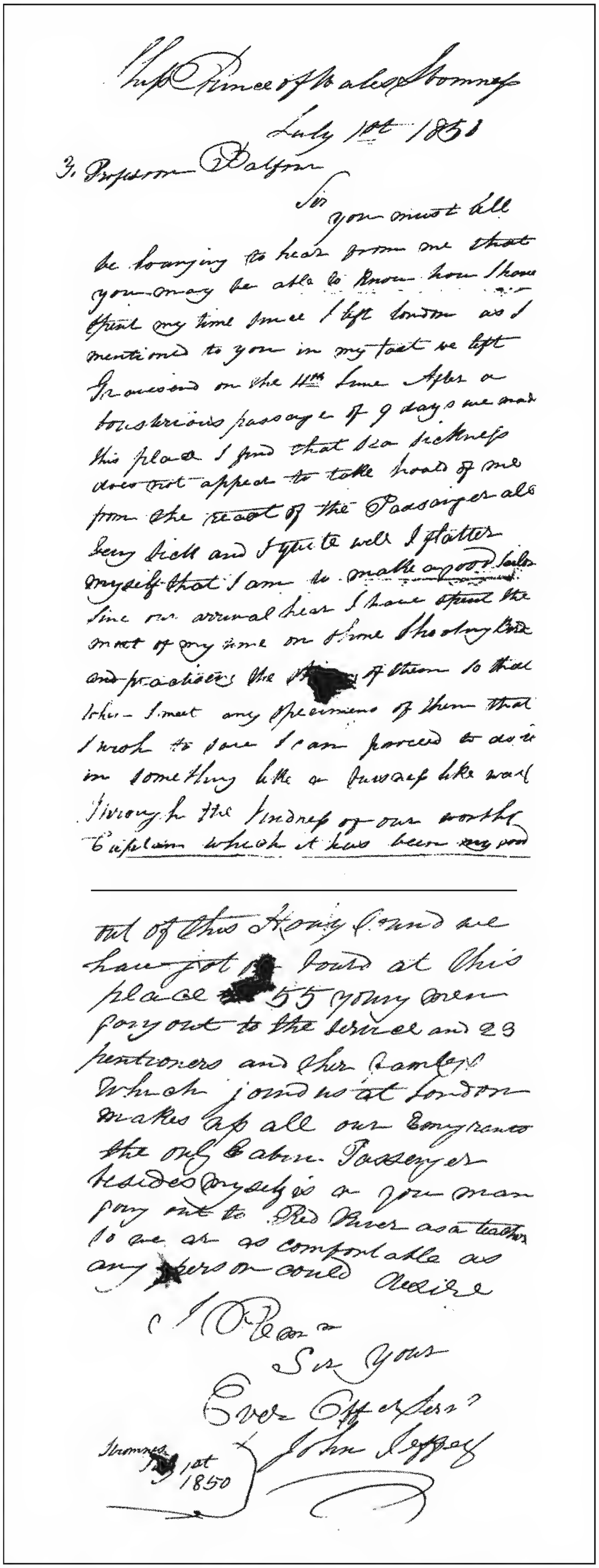
To be fair to Jeffrey, four of ten boxes and packages of specimens and seeds, which he said in letters had been sent, did not arrive in Scotland (Lange 1967). Perhaps, if we knew of the contents, his travels would be better known and periods of time, (days, weeks, even months), when he appeared to be idle, he might have been busy. The lost boxes might even have contained his missing journal.

## Accounts of Jeffrey's demise

Several versions exist regarding Jeffrey's fate. No corroborating evidence exists for any of them: no newspaper accounts, obituaries, reports, or body are known that establishes date or manner of Jeffrey's death.

James McNab (1873) wrote concerning the death of Jeffrey: "authentic particulars never reached this country. It appears that he was killed trading with Indians." The basis for this assertion is not given.

Frederick V. Coville (1897) came to the conclusion that Jeffrey "…perished of thirst on the Colorado Desert." He based this on a comment in a letter from William Murray in San Francisco to his brother Andrew in Edinburgh. Professor Isaac Bayley Balfour, son of "Old Fibre" Balfour, was Keeper at Royal Botanic Garden Edinburgh from 1887 to 1922. He forbid full publication by Coville of the William Murray letter, perhaps to protect the reputation of the Garden or the brothers, though both were dead by 1897. William died in 1878, Andrew in 1887. Coville quotes only the part of the letter that deals with McKinlay, Garroich & Co. responsible for the shipment of Jeffrey's goods. The Company deciphered Jeffrey's address to Fort Yuma on the Gila River where



Ship Prince of Wales Stromness
July 1st 1851
3. Professor Balfour
Sir
you must all
be longing to hear from me that
you may be able to know how I have
spent my time since I left London as I
mentioned to you in my last we left
Gravesend on the 11th June After a
boisterious passage of 9 days we mad
this place I find that sea sickness
does not appear to take hold of me
from the rest of the Passanger als
being sick and I quite well I flatter
myself that I am to make a good sailor
since our arrival hear I have spent the
most of my time on shore shooting birds
and practising the [illegible] of them so that
when I meet any specimens of them that
I wish to save I am forced to do it
in something like a business like way
through the kindness of our worthy
Captain which it has been my good

out of this Honey Comb we
have got [illegible] board at this
place [illegible] 55 young men
going out to the service and 23
pentioners and their familys
which joined us at London
makes up all our Emygrants
the only Cabin Passenger
besides myself is a young man
going out to Red River as a teacher
so we are as comfortable as
any person could desire
I Remain
Sir Yours
Ever Off Serv
John Jeffrey
Stromness [illegible] 1st
1850

First and last pages of Jeffrey's 1 July 1851 letter to Professor Balfour. Written while on board the *Prince of Wales* at anchor waiting for passengers to board at Carston Roads in the Orkney Islands. Intervening pages show a gradual deterioration of handwriting quality.

he planned to be until the 1st of August. They further state that he directed that his letters be forwarded to Mr. F. Ames, Adam's & Co. Express in San Diego. McKinlay, Garroich & Company also reported that Jeffrey had been sick for some weeks before he dispatched "the proceeds of his excursions…which counts for part of his long stay in San Francisco."

Coville also quotes from John Ballenden's 1 February 1854 letter to Andrew Murray. Ballenden knew Jeffery at Fort Vancouver in 1852 and 1853. Ballenden was the Hudson's Bay Company's Chief Factor at Fort Vancouver. Ballenden expresses concern over the fate of "poor Jeffrey" and that if he followed his intended route he would have "some dangers of no very trifling nature to contend with."

Alexander Caufield (A.C.) Anderson, of Victoria, British Columbia, father of James R., apparently knew Jeffrey and had met him while stationed at Fort Colville. His son James claimed to have known Jeffrey and was with him when he collected a woodpecker while in Victoria the spring of 1851 or 1852. In 1872, the father had a footnote in his *The Dominion of the West*: "Poor Jeffrey, it may be added, after wandering, sometimes in company with the writer, through a considerable portion of British Columbia, and braving all its fabulous dangers, met his fate in New Mexico, in 1852. He was murdered by a Spanish Outcast, for his mule and scanty traveling-appointments." There is no supporting evidence. In response (1936) to an inquiry by J. T. Johnstone, librarian at RBGE, Professor John Davidson states "either of his [A. C.'s] two sons are not taken very seriously here [B. C.]."

However, Sir Isaac Balfour told James Anderson when he was in Edinburgh that "after leaving Fort Victoria he (Jeffrey) found his way to San Francisco then in the throes of the gold excitement and was never heard of afterwards, probably murdered by the lawless ruffians who congregate at all mining camps." This brings us to: *another possibility*. Read between the lines in the following letter.

> SAN FRANCISCO, 19th May 1854
>
> My Dear Andrew,
>
> I yesterday received your letter enclosing one for Jeffrey and one for Mr. Ogden, and with instructions to recall the former and stop his credits.
>
> I went again to KcKinlay, Garvioch [*sic*] & Co., and they have deciphered his address to be Fort Yuma on the Gila River (just where it joins the Colorado) where he says he will probably be until the 1st of August, and directs his letters to be forwarded by Adams & Co.'s express to the care of their Agent at San Diego, Mr. F. Ames.
>
> I accordingly put his letter in an envelope addressed in conformity with these instructions and took it to Adams & Co.'s express and told them (as they are Bankers as well as express men) that the letter contained his recall, and at the same time called their attention to the advertisement which I had caused to be put in the "Alta California" and which is:–
>
> > *The Oregon Association, hereby notify that JOHN JEFFREY, Botanical Collector is so longer in their service, and that they will not be liable for any debts he may contract.*
> > *By order of the Committee,*
> > *For ANDREW MURRAY, Secretary,*
> > *W. Murray, 131 Montgomery Street.*

I also called the attention Page, Bacon & Co. who I was told had cashed his dfts., to the advertisement, without comment. The same with Davidson (Rothschild's agent) and I told McKinlay & Garrioch of his recall.

I am inclined to think from their description of the man that he is honest. They say he is a hardworker, enthusiastic, very steady and temperate man, and that just before starting for San Diego he was some three weeks arranging the proceeds of his excursions, and they doubt not that he dispatched them. He had been for some weeks sick before that, which accounts for part of the long stay in San Francisco.

I think he has misapprehended the nature of his mission, and supposes that a single specimens or so of everything he saw was all that was required of him, fancying rather that he was sent to find out what was here, than that he was required to stock H. B. Majesty's Islands with it.

I met the Consul just now and he said he had received another letter for Jeffrey. I forwarded it along with yours. The Consul says that he (Jeffrey) never called at the Consulate, that there had been quite a budget of letters and other things there for him: which have since been forwarded to him by McKinlay Garvioch [*sic*] & Co., same time as your previous letters went.

I hardly expect to see him back, and I hope he may be able to show you on his arrival home that he is only an ass.

Among other things which he neglected to tell you of he informed McKinlay Garvoich [*sic*] & Co. that he could do nothing on Vancouver Island on account of the brush-wood which is so thick as to be impenetrable except by cutting your way axe in hand, information which I quietly put into our own pipe for our private smoking. Another thing- that he intended to come out here again - so we must "hurry up the cakes" although he will not be a formidable competitor.

The letter for Mr. Ogden I took to the Office of Allan Lowe & Co. the correspondents of the Hudson's Bay Co. in San Francisco and they have promised to forward it. A young Scotchman there told me that he knew Mr. Jeffrey very well and intended to have called on me on the sight of the advertisement, to inquire what it meant, as he believed him incapable of doing anything wrong, but said he was slow and very quiet, I gave as the reason that the Society was about to be dissolved.

You will possibly think that I ought to have been able to find Jeffrey when he was here, but at that time, I neither knew that McKinlay, Garvioch [*sic*] & Co. were acquainted with him, nor that Allan Lowe & Co. were connected with the Hudson's Bay Co.

Now then - I have done all you told me to do, and for the result you must "let her rip."

I spoke to Sam Price about it and he says the only satisfaction you can get out of a fellow of that kind is to come out here and shoot him through the navel with a Mississippi Yangur, nobody will say any thing to you; or if there is an investigation it will be brought in justifiable homicide.

There was an advertisement in one of the papers the other day, somewhat after this fashion –

> *"The publication of the Police Gazette will be postponed for a month in consequence of the assassination to the Editor".*

Them's not the words, but them's the sentiments. Cool, isn't it?

I remain,
Your affectionate brother,
(Sgd.) W. MURRAY

What an interesting letter. As far as I know, this is the first time the entire text has been published. It speaks to Jeffrey's character and a tantalizing prospect. Maybe Jeffrey never left San Francisco, but his goods did.

The only notice calling Jeffrey in that I could find published in the Daily Alta California was:

> *John Jeffrey, Collector for the Oregon Botanical Association, if in San Francisco or the neighborhood, is hereby requested to call at the office of W. Murray, 170 Montgomery Street to receive a communication from the Society.*
> *San Francisco, Jan. 27, 1854.*

The ad ran daily from 29 January until 4 February 1854. Why William did not give brother Andrew the text of the ad as published is not known. I suspect that William realized that if he ever would be able to lure in Jeffrey he would have to use more temperate language. But, if Jeffrey called, there is no record of it. That could be because he had already left San Francisco on his way south to Fort Yuma and San Diego. Or, he might have met a far more sinister fate at the hands of Balfour's ruffians in San Francisco. Just how unhappy was the Oregon Association with Jeffrey's performance? And, was the life insurance policy allowed to lapse because they wanted no investigation of Jeffrey's disappearance?

## Dismissal for "neglect of duty"

As the subscribers and members of the Oregon Expedition Committee became increasingly unhappy with the quality and quantity of Jeffrey's efforts, W. Gibson Craig seemed particularly irked. In his 5 January 1854 letter to Andrew Murray he wrote, "Jeffrey is indeed a most extraordinary fellow, and his conduct is utterly incomprehensible." Again on 25 January 1854 "It is most extraordinary that there is even by this Mail no letter from Jeffrey, who must at least a month before it was dispatched have received all your letters. You must now call a meeting of the Committee that we may consider what is to be done."

Interestingly, Jeffrey's three-year contract with the Association began 29 May 1850. Did this mean that his contract terminated 29 May 1853? He was still making collections in the fall of 1853. No wonder he behaved as he did in San Francisco. He was apparently ill and no longer in the employ of the Association.

The Minutes of a meeting of the Committee on 23 March 1854 summarize what was known, or not known, of Jeffrey's last days in San Francisco. Given as present were Sir William Gibson Craig in the Chair, Wm. Murray, Esq. of Henderland, James McNab, Esq., and Andrew Murray. W. S. Secy. Complaints included, "The quantity of seeds sent home in Box No. 10 was so exceedingly trifling for a year's collecting that it was obvious that Mr. Jeffrey was not discharging his duty to the Association in this respect either." The committee unanimously resolved to dismiss Mr. Jeffrey for neglect of duty. The secretary was instructed to inform Jeffrey.

The Association had a strongly worded legal document made on "the Thirtieth day of September one thousand eight hundred and fifty four years" in Scotland whose purpose was ".... to make payment and deliverance to the pursuers of the sum of Seven hundred pounds, or such other sum or sums as may be owning by them to the said John Jeffrey...." Although I have no evidence Jeffrey knew of this directly, he may have sensed it was coming (if he were still alive). Perhaps the purpose of the dismissal was to officially absolve the Association of any responsibility for a former employee who had mysteriously disappeared?

## A final insult

In 1858, several years after Jeffrey's death and after the realization that Jeffrey's work was less than perfect, Sir William Jackson Hooker described *Penstemon jeffreyanus*, the plant Jeffrey had discovered and collected near Deadwood in the Scott Valley in 1853. According to Stearn (1992) the name of person used as a species name is normally given a Latin genitive ending, as in *Pinus jeffreyi*, or converted to an adjective agreeing with the generic name, usually an -iana ending. If, however, the name is merely given as a compliment, the name should be rendered in an

Azure penstemon (*Penstemon azureus*, formerly *P. jeffreyanus*). Photo by Norm Jensen.

adjective form, with the termination -anus. Jeffrey clearly was the discoverer of the plant and as the botanist, John Lindley suggested in 1832, "If the individual is the discoverer of the plant….the specific name should be in the genitive singular." As in *Penstemon jeffreyi*, not j*effreyanus*. Hooker may have been expressing the Oregon Association's frustration with Jeffrey's overall performance. For the record, Sir William and Professor Lindley were asked to name expedition specimens, so it is not as though they didn't know what they were doing. If you are still wondering what this is all about, pronounce the specific epithet out loud.

As William Murray might say, "them's the sentiments. Cool, isn't it?"

## Acknowledgments

The cooperation of the staff of the Royal Botanic Garden Edinburgh for providing specimen photographs and portraits, and permission to quote from the materials of the Oregon Association is gratefully acknowledged. Other sources include materials in the Special Collections Division of the University of Washington Libraries, especially the correspondence of Dr. William Fraser Tolmie and John Work. Thanks to Peter Zika for providing a copy Ravenscroft's text from the University of Washington Library and to J. St-Claire, Natural resources Canada for a brief biography of Robert Douglas. Ann Beauchamp and Kathy Hoxmeier, Hannon Library, Southern Oregon University were particularly helpful. Finally, thanks to Cindy Roché for her extraordinary editorial abilities.

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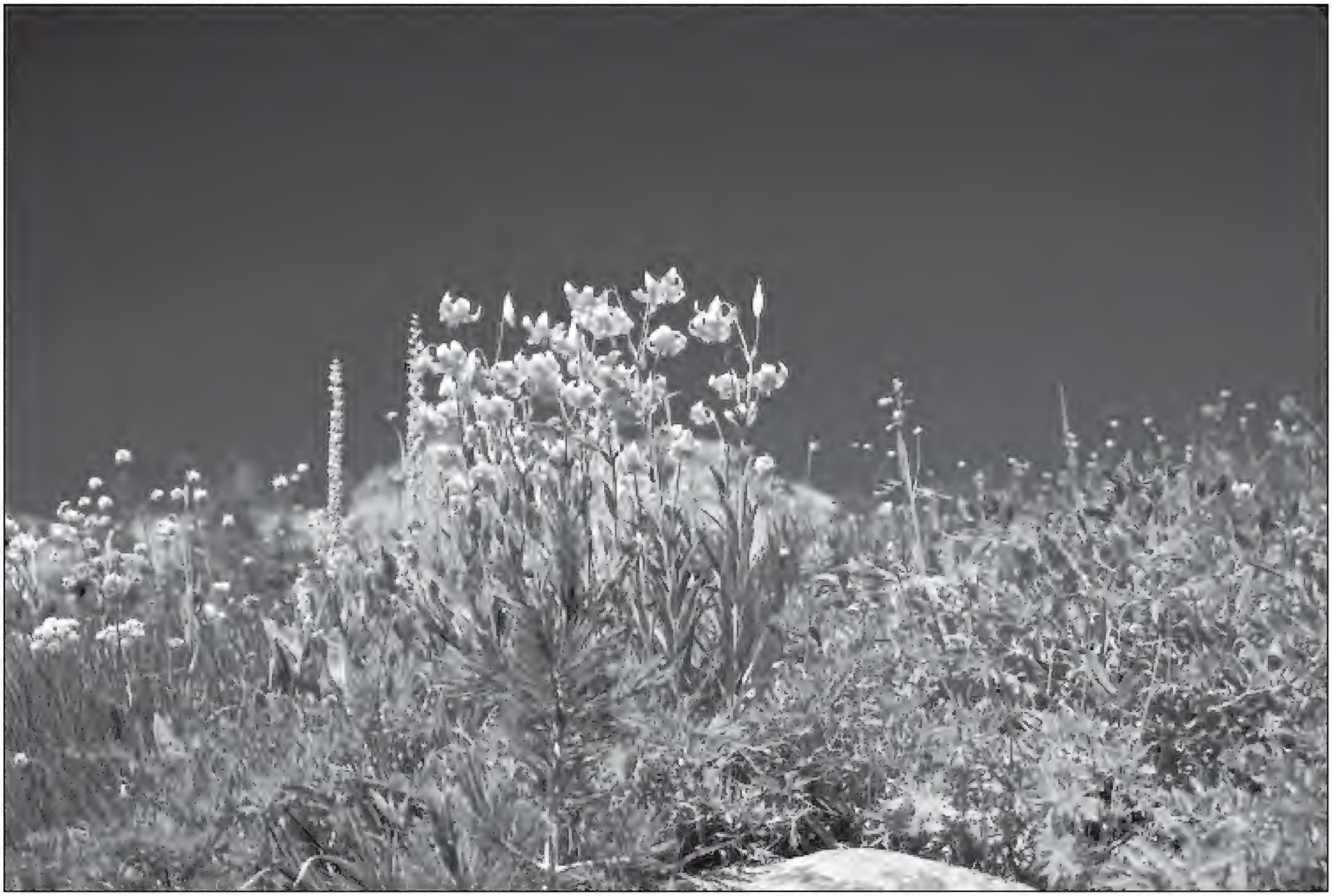
# Photographing Wildflowers: Are Your Pictures Worth 1,000 Words?

Robert C. Korfhage
109 Meadow View Drive, Phoenix, OR 97535



The first step is identifying the primary subject. This photo contains many opportunities, but because a subject has not been isolated, it looks busy.

After a near-perfect day of photographing some of Oregon's flora on a recent NPSP field trip, you eagerly anticipate showing the images of your botanical discoveries to your friends. However, as you review your photographs, you are disappointed by the images. The blossoms you remember as being vibrant in color appear dull, details of the flowers are fuzzy and key characteristics you wanted to capture for identification are out-of-focus or absent. Many of the flowers you wanted to share with others are so distant they are unrecognizable or appear dwarfed by the surrounding landscape. In other photographs, clutter distracts the eye from the primary subject. You don't want this to happen again and wonder what you can do to improve your pictures.

Producing outstanding photographs is much easier with today's high-tech cameras. Even without all of the "bells and whistles," the new digital cameras can produce excellent images. However, the camera's success is highly dependent on its owner's knowledge of its capabilities and how to use them along with some important photographic techniques.

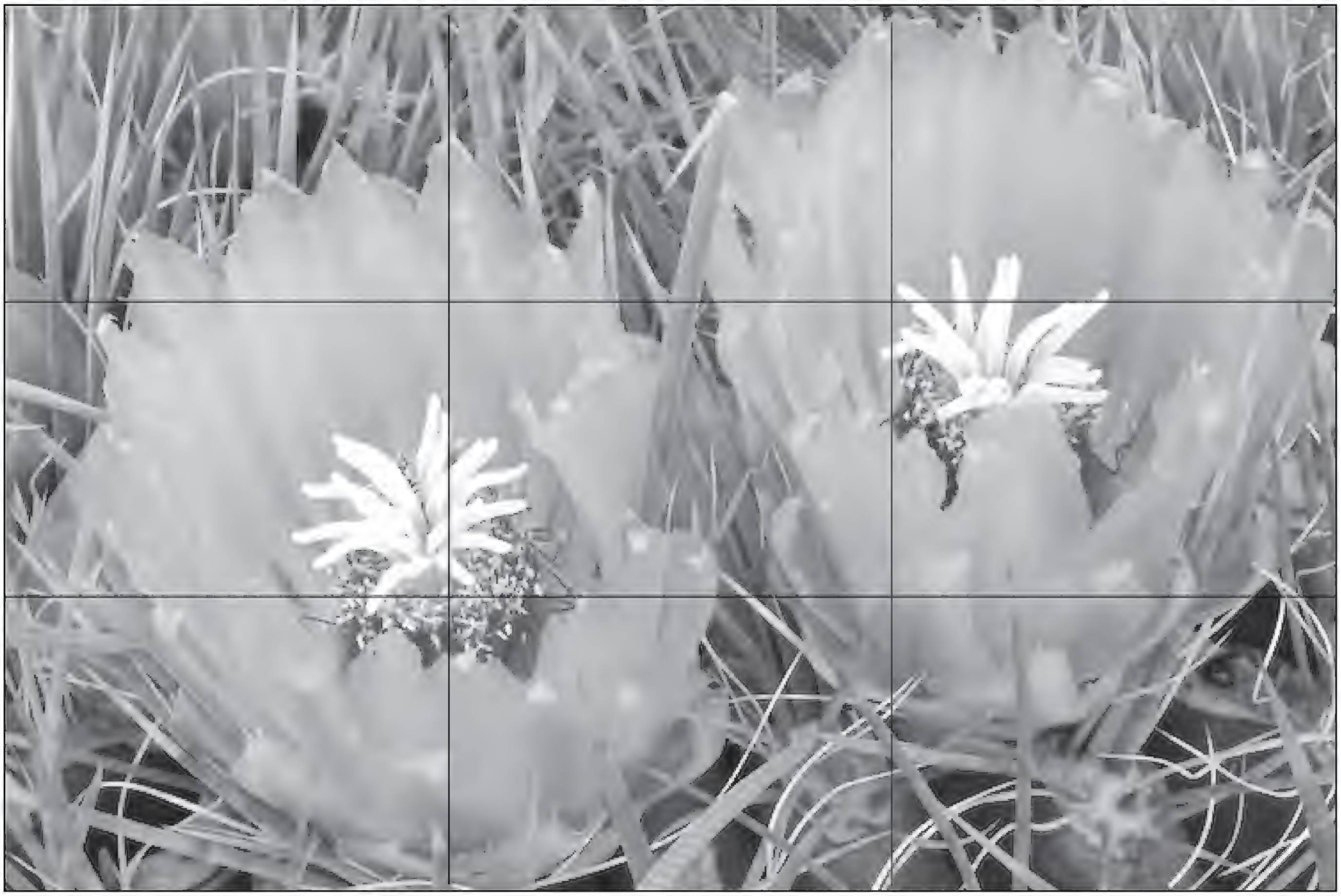
Taking good wildflower pictures requires more than just looking through the viewfinder and pressing the shutter release button. *You, the photographer, not the camera, are the primary avenue to creating good pictures.* Even with today's automated cameras, knowing some basic elements of photography can help improve your wildflower pictures, while you let the camera do the mechanical work. Regardless of whether you own one of the newer digital cameras, an older film point-and-shoot, or a 35-mm single lens reflex (SLR), the following techniques will improve your pictures. These techniques are described in sequential order, all of which are done before pressing the shutter release, which is the final step.

## Don't just take a photograph, make one!

Imagine that you come around the bend in a trail and encounter a meadow full of spectacular wildflowers. Your first instinct is to grab your camera and start snapping pictures. *STOP!!* Sit down, relax and mentally plan the images you want your camera to create. You have some important decisions to make before you start shooting pictures. Create the desired image in your mind and then duplicate it in the viewfinder. The first task is to identify your photographic objective. Is it capturing the flowers in the foreground with the full landscape view, an individual plant, important floral characteristics for future reference, filling the viewfinder with vivid color, or showing the plant in its natural habitat? Once your purpose has been identified, walk around the primary subject and view it from different perspectives (elevations and angles). Decide if you want the subject displayed vertically or horizontally. Look at your subject and visualize it in terms of lines, forms, textures, patterns, shapes, and color. Mentally create a composition using the key elements of the subject.

Although this photograph is shot at closer range, it is still cluttered and does not lead the viewer's eye to an obvious subject.

Once you have the general concept in mind, begin to simplify it. Decide whether you want to emphasize the entire plant or just the beautiful lines in the petals. Specifically identifying the primary subject will help simplify your composition. Usually, when it comes to capturing a quality image, less is more, and the closer, the better. This is a good time to take out your camera and use your viewfinder to get the desired composition. Keep your finger off the shutter release, though, because there is a lot to consider before finally capturing the best possible image.


In the rule of thirds, objects should be close to the intersection of the lines for a pleasing arrangement.

## Catching the viewer's eye

Good photographers use composition to produce images that are visually balanced and pleasing to the eye. One of the most useful techniques is the "rule of thirds." To use this simple rule, mentally divide your camera's viewfinder into nine sections using imaginary horizontal and vertical lines. Then, use this grid to position the important elements of your photograph on one of the four intersecting points of the grid so that it is one third down from the top or up from the bottom of the frame, and one third in from one edge of the frame. Any of the four intersections can be used to produce a more pleasing composition. To prove this point, pick up any magazine or book with good photographs. Place a grid of thirds over the photograph and you will see that the primary subject usually falls near an intersection of vertical and horizontal lines. You can also observe this when watching television. The placement of an important actor's head is normally at one of the grid intersections, not in the center of the screen.

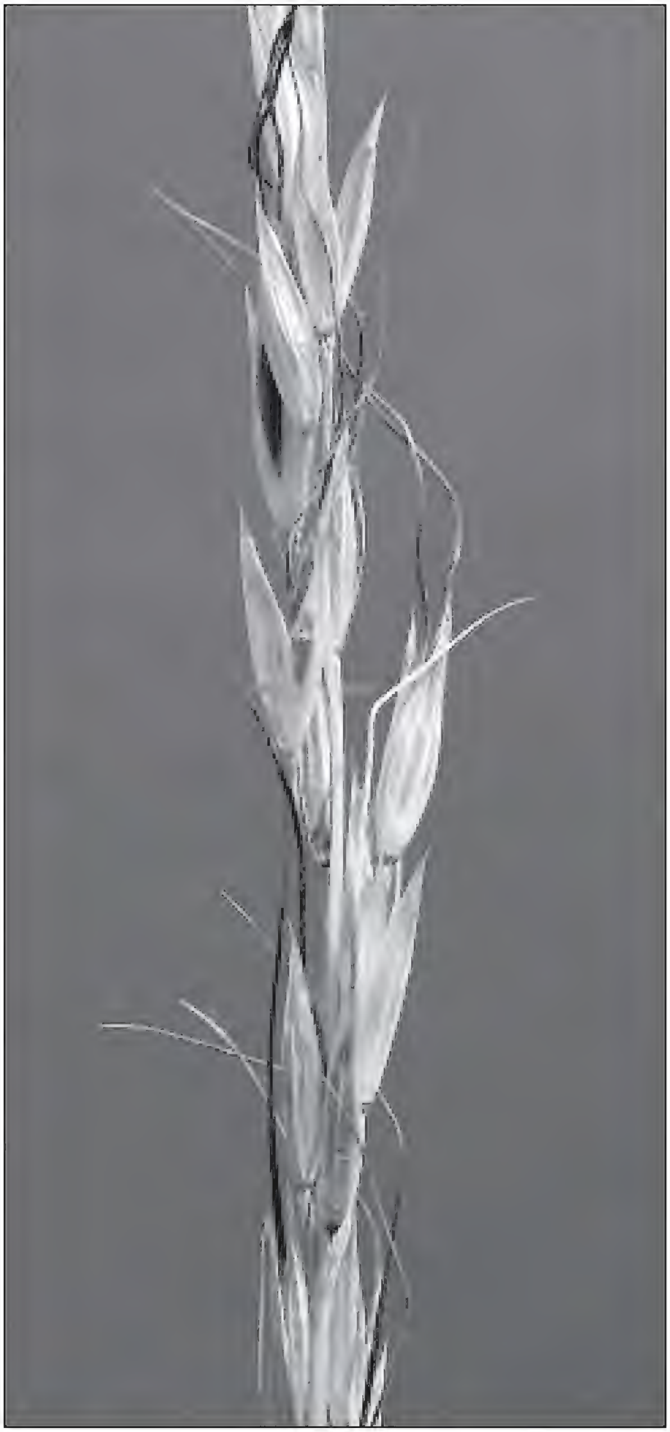
The vertical lines also serve as a guide to divide up the frame vertically for placement of elongated subjects. Horizontal lines can help you place the horizon in your photograph in either the upper or lower third. Horizon lines should rarely be placed in the middle of the frame. Although the use of the rule-of-thirds is an excellent guideline, never force a picture to comply with it if the composition just does not work.

While you are looking in your viewfinder and arranging the composition, scan for excess clutter and specifically look for items in the potential picture that will pull the viewer's eyes away from the subject. Eliminate these distracting items by adjusting the camera angle or physically removing objects from around the primary subject. I often place a large gray card or black poster board behind the subject to eliminate background clutter to make the flower stand out. Another technique for creating pleasing compositions of multiple wildflowers is to arrange them together in groups of three.

## Creating magic with light

Now that you have chosen a subject and composed your photograph, you need to consider the lighting. In photography, lighting is everything…well, almost everything. Understanding light and how it affects the subject will help you create stunning images. Also, understanding how to adjust for and use the light of the moment can lead to better photographs when conditions are less than ideal.

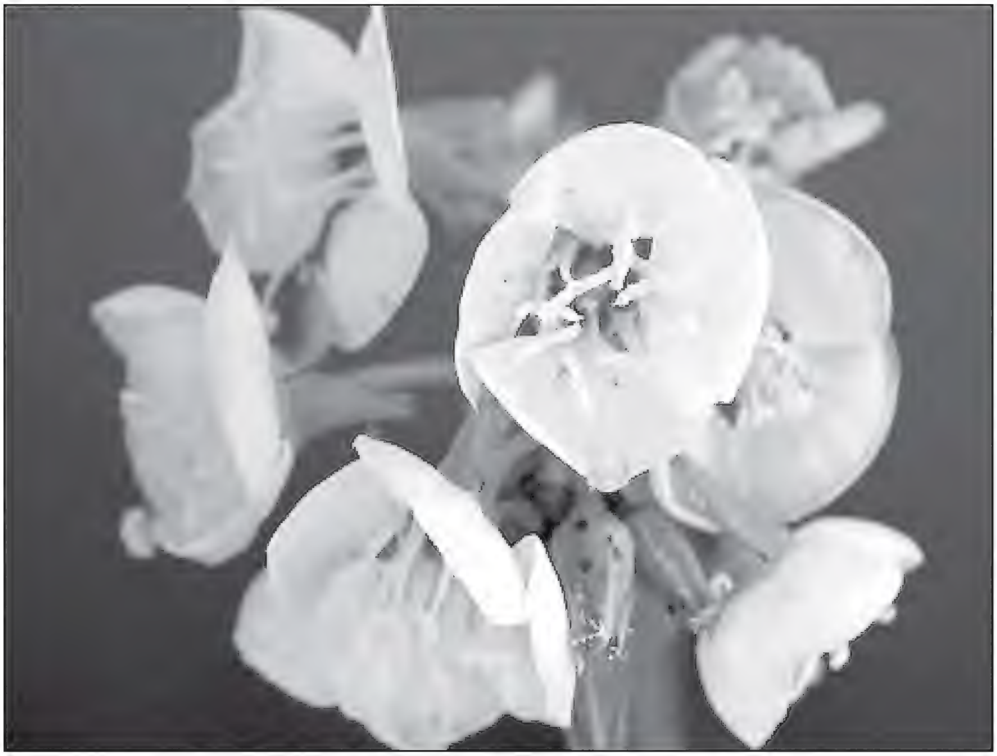
Analyze the subject of your photograph to determine the direction of its light source; whether from the back, side, or front. Backlighting can silhouette the subject, and makes flowers shimmer and look ethereal. Side lighting enriches colors and reveals surface texture, line and form; it also creates dramatic shadows, creating the illusion of greater depth of field. Early morning and late afternoon light (when the sun is at a lower angle) creates warmer colors, is softer in intensity, and produces more dramatic photos. In shade and on overcast or misty days, light is more diffuse and uniform, bringing out rich colors. Bright, mid-day light flattens textures and bleaches colors. Timing is everything if you want the very best lighting conditions for special effects or dramatic images. Light is best early in the morning or late in the day for outdoor photography. I refer to sources like the newspaper, weather stations, or my GPS (Global Positioning System) to find out when the sun rises and sets to plan my outings for the best light.



Grasses can be difficult. In this photograph of Lemmon's needlegrass (*Achnatherum lemmonii*), a gray card eliminated background distractions and gave an accurate light meter reading.

Because group hikes are seldom scheduled during hours that are optimum for photography, you will often encounter irresistible wildflowers in bright mid-day sunlight. When this happens, you have several options: you can mark the location and return later when the light is better; you can look for the same flower in the shade; you can go ahead and snap the picture (recognizing that it is not likely to be the best image); or you can try to create a better lighting situation on the spot.

Better lighting can be created using sunshades or diffusers. Harsh mid-day light is softened by shading the subject with opaque or translucent material of an umbrella, or other items like vehicle sunshades, backpack, a coat propped up on sticks, or a partner. Commercial products available for diffusing and reflecting light are usually a circular piece of thin material in a hoop which folds up 1/3 the size for compact storage. They are lightweight and easy to carry in the field and come in different types of cloth (gold, silver, white, black), some of which are reflective and bounce light back onto a plant in the shade. Make sure that the material used for shading does not transmit unwanted color to the subject. For example, direct sunlight transmitted through a bright pink umbrella may add an unnatural pinkish tint to the subject.



The white blossoms of brown-eyed evening primrose (*Camissonia claviformis*) in this photograph stand out because the viewer is not distracted by background clutter. To achieve the correct exposure, I metered on the gray card.

Don't forget about using your on-camera flash in reduced light or when you are shooting in shadows. If you are fortunate enough to have a camera lens that takes screw-on filters, use polarizing, neutral density, or warming filters to enrich colors, reduce glare and alter existing light conditions. Also, keep a lens shade on your camera when photographing in harsh light conditions.

When using digital cameras, it is particularly important to adjust the white balance for different lighting conditions. For most cameras this can be done automatically by turning a knob on the top of your camera to an image of bright sun, partial sun, full cloud or flash conditions. For anything other than automatic modes, check the camera manual for instructions on adjusting the white balance.

### Avoid indecent exposure!

Most modern cameras allow you to push the shutter down halfway and hold it while the camera focuses and meters the light, taking an average meter reading from various objects in your prospective photograph. Quite a few of the newer digital cameras allow you to modify both the location and the amount of viewfinder area used for the readings. Check your camera manual to see whether you can set the metering location within the viewfinder and whether the reading is averaged across the entire image or pinpoints an exact spot. This feature allows you to take more precise readings resulting in better images. If your camera allows metering adjustments, use the spot meter for the most accurate light meter reading of the reflective light from a single primary subject in your photograph. For example, use the "spot meter" if you are trying to get an accurate light meter reading for a flower petal. In contrast, if the primary subject includes several objects (petals, flowers and leaves), then the averaging method provides a better reading. Using a spot meter you can get different readings from different subjects and then average your findings. Or, you can use the averaging metering system of your camera. Averaged meter readings are normally better for landscape photographs.

### Extracting the truth from your light meter

Your camera's light meter may be the primary reason you don't get eye-popping, crisp colors under some light conditions. Even light meters on the most expensive cameras don't give you the correct exposure under all conditions. Camera light meters are designed to read light bouncing off an eighteen percent reflective gray card. When the light meter is aimed at white or black surfaces, the color tones farthest from neutral gray, the camera meter gives an incorrect reading, resulting in pictures that are over- or underexposed. Obtaining optimum photographs under these conditions requires intervention by the photographer.

Depending on features of your camera, you can usually obtain adequate light meter readings by directing the camera to meter off natural features that are close to eighteen percent gray in the same light as your subject. Find one of the following objects in the same light as your subject and it will be close to a correct meter reading: lawn grass, tree bark, brown earth, weathered wood, blue overhead sky away from the sun, faded blue jeans, or green tree leaves. With some cameras, you can obtain an accurate light meter reading by pointing the lens at a neutral gray object in the same light as your subject, push down the shutter halfway, and then press another button to hold the light meter setting while you refocus on the subject. For example, to photograph the white petals of a trillium, meter on the green leaves then hold that meter reading while shifting your camera lens focal point back to the white petals. The white petals in your photograph will be a crisp, clean white, rather than an opaque, chalky white (the latter results from under-exposure by metering on the white flower). Of course, you can always carry a small gray card, place it next to your subject in the same light as your subject, take a light meter reading from the card and then shoot your picture. Check your camera manual for the correct procedures for focusing and obtaining meter readings. One caution here! If your camera does not allow separate metering and focusing (e.g., most point-and-shoot models), the object that you use for your neutral color must be equi-distant from your camera as your subject; otherwise your subject will be out of focus.

### The f-stop, and can you adjust it?

Most 35-mm film and digital SLR cameras as well as some of the new small digital cameras allow you to set the f-stop and/or film speed. Adjusting the f-stop allows more or less light into the camera, thus enabling you to make corrections to light meter readings. Here are some tricks to help you quickly determine the correct meter reading so you can make these fine adjustments. These tricks can also save your bacon if your light meter malfunctions or the camera batteries run down.

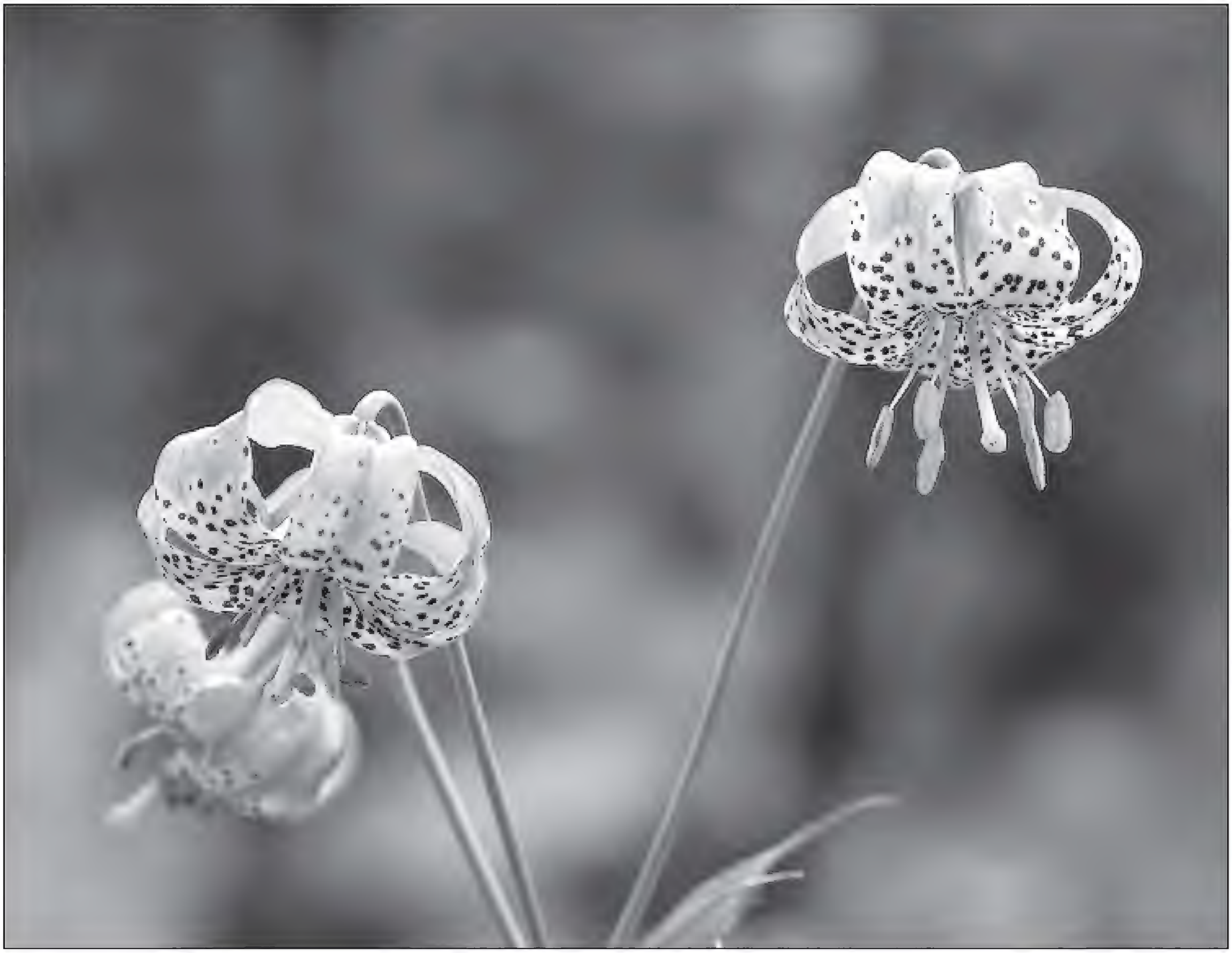
A simple accurate way of estimating the correct light meter reading is called the "sunny 16 rule." From two hours after sunrise until two hours before sunset, you can properly expose front-lit subjects in clear, bright sunlight by setting the f-stop on the lens to f-16 and the shutter speed to the film's ISO number (e.g., f-16 and 1/50th of a second for ISO 50 Fuji Velvia film). On hazy or polluted air days, use f-11. On cloudy but bright days, use f-8. On overcast days or shaded subjects, use f-5.6. On side-lit subjects, use f-11 and on back-lit subjects, use f-8. You can also meter the palm of your hand in the same light as the subject then open up the lens one stop (to allow more light into the camera).

The color of the flower can also fool the camera meter by up to two f-stops. In general, for colors lighter than a medium tone add one to two f-stops (open your lens wider, from f-16 to f-11/f-8). For colors darker than medium tones, reduce the f-stop by half to one stop (close the lens down, from f-11 to f-16). See the chart on page 19 for adjustments with other colors.

### Do you want everything in focus?

Emphasizing your subject requires deciding how much of the photograph you want sharply in focus, a critical element in composition. For example, you may want the pollen on the stigma or anthers to be in sharp focus, but the nearby petals slightly blurred, in order to accentuate the pollen. Or you may focus on a small group of flowers, blurring the background grass and trees so they do not distract the viewer. Narrowing the depth of field that is in sharp focus can enhance your composition by reducing distractions in the background. Deliberately adjusting your f-

When composing photographs with multiple flowers, groups of three are more pleasing to the eye, as in this photo of brittlebush (*Encelia farinosa*).



A telephoto lens can be used to create a narrow depth of field, thereby elimanting background distractions. These flowers of leopard lily (*Lilium kelleyanum*) pop out of the image.

stops, which adjust the focal length and depth of field, is the key to keeping the viewer focused on the most important part of your photograph. Remember that the higher the f-stop number, the smaller the lens opening (f-22, f-16) and the greater the depth of field. The smaller the f-stop, the wider the lens is open (f-2.8, f-4), making the depth of field shallower and the background out of focus. Most 35-mm and digital SLR camera lenses show the range in feet and meters for what is in focus at a given f-stop. Look on the barrel of the lens for this information. Digital camera users should refer to the manual to see if the camera will allow adjusting the depth of field. **Tip**: When shooting close-ups, especially when the lens is very close to the subject, keep the plane of the subject on the same parallel plane as the camera lens to insure a crisp focus across the entire frame.

### Three legs are better than two arms

You don't get sharp pictures simply by adjusting the focus, even if the camera can focus automatically. The camera and the subject have to be dead still to create sharp pictures, especially if you anticipate enlarging your photographs. I maintain that you can identify a serious photographer by the presence of a tripod. It's virtually impossible to hand hold a camera without some movement. Taking landscape photos on windy days may require stabilizing the tripod by hanging additional weight on it. The more you enlarge a photograph the more noticeable the lack of sharpness due to movement. The longer the shutter remains open, the more critical it is for both camera and subject to be perfectly still so tripods are especially important in low light. Rich color in wildflower photos usually comes from longer exposures. The longer the exposure, the more the movement is exaggerated on film.

Tripods come in many different sizes, shapes, materials, and weights. If you do a lot of hiking, you might want to consider a tripod made out of carbon fiber. They are much lighter than the metal ones and don't freeze your hands in cold weather.

Ways to further reduce camera movement while it is mounted on the tripod are to use a fast shutter speed (>125th of a second) and to activate the shutter release using a cable release, timer, or remote control device. Higher shutter speeds are usually needed with larger telephoto lenses.

Other tools for holding the camera still are bean bags, monopods or flat surfaces such as a fence post, a tree stump or a limb. Just bracing your self against a tree can help steady the camera. Some of the newer lenses and some digital video cameras have image-stabilizing lens. These lenses significantly decrease or eliminate camera shake. While none of these options completely replace a tripod, you can get decent pictures if you can stabilize the camera and the subject, especially if the photos will not be greatly enlarged. [editor's note: Tanya Harvey uses an image-stabilizing lens to capture the photos that appear regularly in the NPSO Bulletin.]

### Stopping the wind

Our worst enemy while trying to photograph wildflowers is the wind. Typically, it can be perfectly calm when you find a perfect wildflower, but by the time you get your camera adjusted and the image composed, inevitably a gentle breeze sways the flower back and forth. You normally have four options if you want a sharp picture: 1) put your camera away and wait for a wind-free day; 2) be patient and wait until the wind stops; 3) block the wind; or 4) use something to stabilize the subject. Trying to totally block the wind can be futile, depending on how hard it is blowing. However, I have tried, with some success, using a car sun shade, my back pack, stretching my coat between to sticks, and having a friend positioned to block the breeze. My greatest success has come from a photo tent constructed from a cheap backpacker's free-standing dome tent. If you sew (or know a seamstress) cut out the tent floor and replace the side and top panels with nylon tulle. The tulle diffuses the light, the cut-away floor allows you to place the tent over the top of a rooted subject, and you can get inside the tent with your tripod. Carry some stakes to anchor it to the ground. For keeping the plant still, carry some clothes pins, metal binder clips, and some stiff metal wires or thin wooden dowels and some twist ties. These items will allow you to secure the plant to the pin, rod or dowel. Using a flash can also stop the movement. However, be careful, because using a flash close to the subject typically overexposes the image unless you have a flash that's dedicated to your camera and adjusts for close-up photographs.

Alternatively, you can create pleasing artistic photographs by setting your camera at a slow shutter speed and let the wind blow the flowers back and forth during the exposure. The result is a colorful blur that adds movement in your photograph.

### Other wildflower photography tips

- Photograph immediately following a gentle rain or when there is morning dew on the plants. Alternatively, carry a small water bottle with a mister. Misting a fine spray of water on the petals enhances a fresh vibrant look.
- Make notes of your photography efforts. This will help you see your successes and failures by analyzing your photographs. Next time you photograph a similar subject in a similar situation, you will be able to make adjustments for a better picture after reviewing your notes. I developed a form that I use to record my efforts, shown on page 20. You could also include a comments column as I find myself making additional notes on the back of the form.
- Use a slower ISO speed on digital cameras or slower speed film in addition to longer exposures to achieve good color saturation. Be cautious as this has to be done on a tripod in a wind-free environment.
- Get close to your subject. Eliminate extraneous objects and colors. Fill the frame with just one object.
- Bracket your meter reading by taking multiple photographs of the same subject with over- and under-exposure adjustments in 1/3-, 1/2-, or full f-stop increments.
- Take lots of pictures of the same subject. Photograph from different angles, elevations and distances. You will rarely get the best possible shot with just one try.
- For close-ups, or small flowers, use a two element close-up lens, or an extension tube for low cost macro photography.

### Guidelines for adjusting light meter readings for color

| **Reduce by 2 f-stops (e.g., f-8 to f-16)** | **Reduce by 1 f-stop (e.g., f-11 to f-16)** | **Use the camera meter reading** | **Increase by 1 f-stop (e.g., f-16 to f-11)** | **Increase by 2 f-stops (e.g., f-11 to f-5.6)** |
|---|---|---|---|---|
| jet black | grayish black | 18% reflective gray card | white | bright white |
| extremely dark shades of red, yellow, green, blue, black | dark shades of red, yellow, green, blue | medium shades of red, yellow, green, blue | light shades of red, yellow, green, blue, pure yellow | very light shades of red, yellow, green, blue, |
| | purple, maroon, navy blue (-1.5 f-stops) | olive green | lime green (+0.5 f-stop)<br>cyan, aqua (+1.5 f-stops) | |
| | Examples: e.g., red trillium flowers, rich green grass, pine tree needles (-0.5 f-stop) | | Examples: yellow aspen leaves (+0.5 f-stop) white trillium flowers, drier green grass (+1 f-stop) | |

- Overexpose negative film one stop for saturated color.
- Don't let the hurried pace of the group steer you away from a good photograph. Capturing a quality image takes some time. Let a member of the group know that you are stopping to take some pictures and that you will catch up with them.

## Practice makes faster/easier/better

Although the phrase "practice makes perfect" is an old one, it is especially true when learning to use your camera to photograph wildflowers. If your camera sits idle in the closet for months, you will forget how to use it. In contrast, if you apply these photographic techniques on a frequent basis, your images will indeed be worth a thousand words and your friends will be able to identify plants from your pictures. Keep notes, practice the techniques regularly, be critical of your efforts and make adjustments on your next photography excursion. The time from visualizing the image you want to capture, composing the scene, getting the correct light meter setting and pushing down on the shutter will be shorter each time you go through the steps. The process will soon become automatic and your fellow botanists will not have to wait long for you to catch up to the group. It's time to grab your camera and begin making stunning images of the flora you enjoy.

## Acknowledgments

I want to express my appreciation to Tanya Harvey, Norm Jensen, Frank Lang and Bob Vos, all excellent wildflower photographers, for reviewing this article and offering valuable suggestions.

## Suggested reading

Blaclock C, Blaclock N. 1987. Photographing Wildflowers (Natural World): Techniques for the Advanced Amateur and Professional. Still Water (MN): Voyageur Press.

Cox J. 2005. Digital Nature Photography Close-ups. New York (NY): American Photographic Book Publishing.

Grill T, Scanlon M. 1990. Photographic Composition. New York (NY): American Photographic Book Publishing.

Meehan L. 2001. Creative Exposure Control. New York (NY): American Photographic Book Publishing.

Rokach A, Millman A. 1995. The Field Guide To Photographing Flowers. New York (NY): American Photographic Book Publishing.

Shaw J. 1991. Focus On Nature. New York (NY): American Photographic Book Publishing.

Shaw J.1984. The Nature Photographer's Complete Guide to Professional Field Techniques. New York (NY): American Photographic Book Publishing.

## Suggested web sites

http://www.calphoto.com/phototip.htm
http://www.paragon-press.com/tips2.htm
http://mdc.mo.gov/nathis/plantpage/wflowpho/
http://www.apogeephoto.com/may2004/along5_2004_1.shtml

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Bob Korfhage is a member of the Siskiyou Chapter of NPSO. He retired from the Bureau of Land Management several years ago, having spent two thirds of his career as a Natural Resource Manager in southern Oregon. Photography is one of his passions; others include bicycling, fly-fishing, and elk. All photos in the article are by the author.

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### Form For Recording Exposures

| NO. | Primary Subject | Exposure/Lens | Meter Adjustments | Metered Object |
|---|---|---|---|---|
| 1 | | ____@ f____ | -2, -1, 0, +1, +2, 0.5 | |
| 2 | | ____@ f____ | -2, -1, 0, +1, +2, 0.5 | |
| 3 | | ____@ f____ | -2, -1, 0, +1, +2, 0.5 | |

# Martin Woodlock Gorman (1853-1926): Outdoorsman Extraordinary

Mariana D. Bornholdt
133 La Placita Circle, Santa Fe, New Mexico 87505

(Adapted from an essay that will appear in Plant Hunters of the Pacific Northwest, edited by A.R. Kruckeberg and R. M. Love)

Martin Woodlock Gorman (1853-1926) Photo from the decade between 1910 and 1920, Gorman about 50 yrs old. Courtesy of Oregon Historical Society, #OrHi 67801.

Gorman is an unsung pioneer of Pacific Northwest botany. An immigrant of modest means, he came to Portland, Oregon, in the late nineteenth century from Montreal, Canada. He soon established himself among Portland's mountaineers and explorers, and maintained an active relationship with them until his death in 1926. A self-taught botanist, passionate about plants, as well as nature and indigenous peoples, Gorman corresponded regularly with professional botanists. An inveterate plant collector himself, he donated generously to other plant collectors. He remained active in field botany until his death at age 73, collecting and identifing more than 7,800 species of plants during his years in the Northwest. Gorman published no books, contributed most of his writing to Mazama Mountaineering Club publications, and is mentioned in botanical literature only when credited with type specimen collections. However, his surname survives as part of the scientific name of three species, conferred by his contemporaries in the botanical community in recognition of his tireless collecting and generosity.

## Early years

Martin W. Gorman was born in Canada on November 23, 1853, at Douglas near the town of Eganville, Renfrew County, Ontario, on a farm first worked by his grandfather. He was the son of Peter Gorman, born in County Clare, Ireland, and Mary (Woodlock) Gorman of Bangor, Maine. He had at least one sibling, a brother named John. Gorman's father had been engaged in the lumber business before taking up farming, and Gorman apparently shared his interest in trees. A close friend of Martin Gorman as an adult reported that he related fond memories of spending many youthful hours creating a personal arboretum by transplanting various species of trees from the surrounding forest.

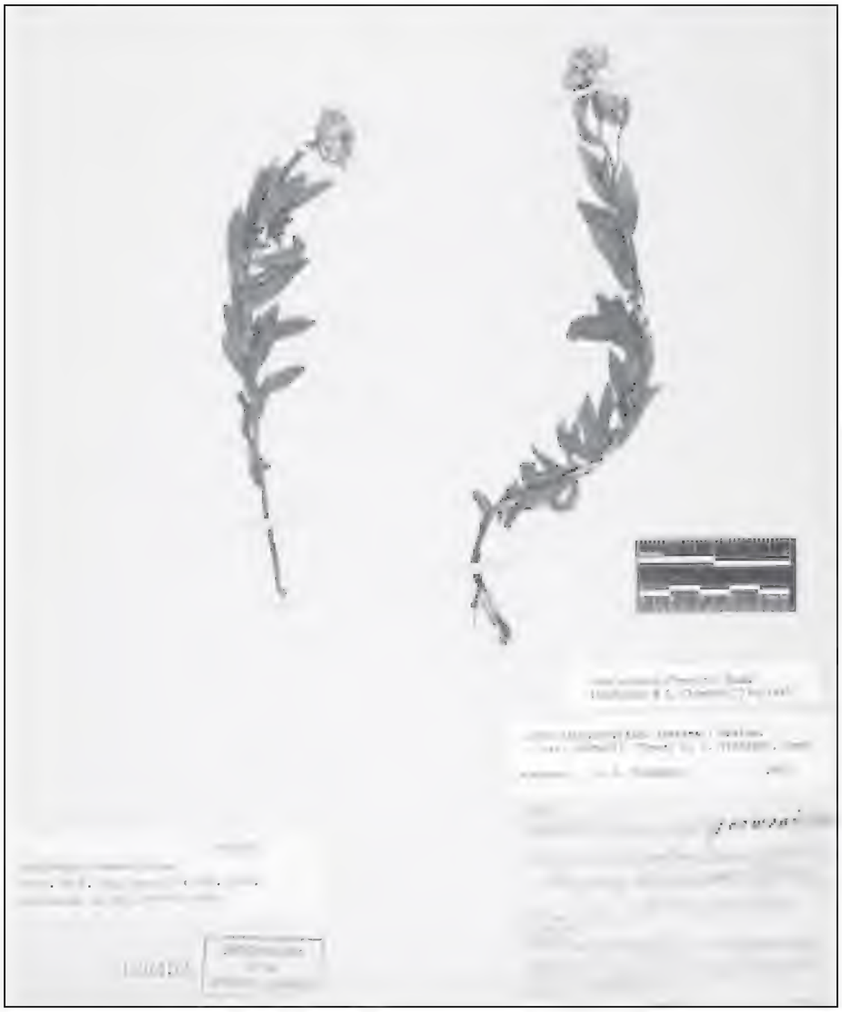
## Gorman's vocations

At age 16 Gorman graduated from common school and left home to work in a general store in Eganville. After four years, he moved to Montreal, where he spent eleven years as bookkeeper for Thomas Darling and Co., a wholesale hardware company. While in Montreal he occasionally attended the lectures of eminent geologist J. W. (later, Sir William) Dawson, at McGill University. In 1876 he enrolled at McGill where he made the acquaintance of John Macoun, later renowned as the dean of Canadian botanists. However, contrary to published obituaries, Gorman received no degree from McGill.

On February 18, 1885, Gorman, now 32, moved to Portland, Oregon, starting as a bookkeeper with the *Catholic Sentinel.* Over the years he worked for a succession of Portland banks and businesses in varying capacities: bookkeeper, teller and accountant. In 1891 he went to work for D. W. Crowley and Co., a banking concern, where he remained until 1896. This connection resulted in Gorman's six summer trips to Yes Bay, in southeastern Alaska, to oversee the salmon harvest. (Yes bay, formerly known as Yras Bay or McDonald Bay is located in the Inland Passage 40 miles north of Ketchikan. "Yras" means "blue mussel" in Tlingit.) In 1898 he worked as a freight clerk at Mason, Ehrman and Company, followed by employment as a bookkeeper for Charles Hegele and Company in 1900. In 1902, Gorman began a two-year stint as an independent fish broker. He also worked intermittently as a bookkeeper for the Blue Mountain National Ice Company, a Gorman family-owned business. During the last 20 years of his life, Gorman was custodian of the Forestry Building, a facility of the City of Portland Parks Bureau, an appointment gained by recommendation of his friends. He died on October 7, 1926, of pneumonia, reportedly contracted following a cold caught while raking leaves on the grounds of the Forestry Building. He was buried October 11, 1926, at Mt. Calvary cemetery in Portland.

After Gorman's death, his good friend James Carlton Nelson, then Superintendent of Schools for the Salem, Oregon, school district, himself an amateur botanist, wrote:

> *"[He] had the happy faculty of pouring forth a running commentary of reminiscence and illustration, tinged with genial Irish wit, that made his society eagerly sought...his kindly and unselfish disposition,....his interest in humanity was unfailing, and his charity and tolerance seemed never to be exhausted. Much-abused as the word 'gentleman' has been, it could with little exaggeration be literally applied to him; he represented the finest ideals of his race. He was wholly free from vanity or self-seeking, painfully modest as to his own attainments, always ready to subordinate his own judgment, and never indulging in harsh or carping criticism even of those whose views were most widely divergent from his"* (Nelson 1927).



*Eucephalus Gormani* Piper. Isotype. Courtesy of Oregon State University Herbarium and the OSU Valley Library, #120452)

## Gorman's avocations

An active and energetic man, Martin Gorman apparently chose sedentary employment in business to fund his outdoor activities. He seemed uninterested in career advancement, conserving his energy for exploring the natural wonders of the remaining North American frontier. Though continuously employed for nearly sixty years, from the age of 16 to age 73, Gorman's personal interests in vigorous outdoor activity took precedence in his life. He remained a lifelong bachelor. As he developed friendships and commitments with other men who shared his interests in adventure and botany, his opportunities for and interest in marriage probably waned. That Gorman never married was normal for the era and place in which he lived: historians regard the 1890s in the US West as "the decade of the urban bachelor." In a letter from Portland to his brother John in June of 1892, he reported that he was studying botany and mineralogy. His fascination with nature and with exploring the Pacific Northwest never waned. His abiding interest was native flora, especially trees. Gorman seems to have found the high latitudes and altitudes of the Pacific Northwest particularly enticing. His Alaska and Canada trips gave him a longed-for opportunity to study the flora, fauna, and indigenous peoples of the north Pacific coast.

Nelson (1927) credits Gorman with the discovery of 19 plant species as well as a new genus. Eight were named for Gorman, principally by Edward L. Greene, who made most of the determinations for Gorman. Greene was known as a "splitter," and only a few names have survived taxonomic revision.

The following plants currently bear Gorman's name:

*Lomatium gormanii (*Howell) Coult and Rose. Contributions to the US National Herbarium 7:208, 1900. Collected by Howell as *Peucedanum gormani* (Howell, Flora of Northwest America, 252) on April 1, 1898 in high hills opposite The Dalles, presumably in Klickitat County, Washington. (Hitchcock *et al.* 1977, 3:554).

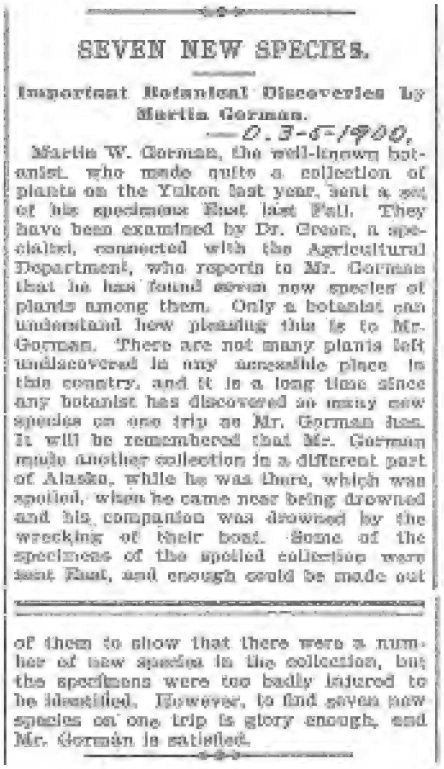
*Ranunculus gormanii* Greene. Pitt. 3:91, 1896. Collected by M. W. Gorman on the wet banks of Cathedral Springs, Crater Lake, Oregon, August 22, 1896 (Hitchcock *et al.* 1977, 2:388).

*Eucephalus gormani* Piper has become *Aster gormanii (*Piper) Blake, Rhodora 30:228, 1928. Collected by Gorman as #2851 on July 24, 1907 at Hanging Valley, Mt. Jefferson, Oregon. (Hitchcock *et al.* 1977, 5:6)

## His travel journal

Gorman began recording his adventures in a pocket journal around 1882. It was initially a diary of his personal activities, but he soon began to include weather observations and plants he saw, as well as geographic and ethnobotanical notes. It is from these meticulously kept records preserved at the University of Oregon library that his wide-ranging field trips and collections can be pinpointed. Three years before moving to Portland, he joined the Oregon Alpine Club's expedition to Mt. St. Helens and Mt. Adams. His first trip to Crater Lake in 1886, is documented by a collection of plants. We learn from his 1889 journal that he accompanied the Alpine Club's second expedition to Mt. St. Helens and Mt. Adams in July. Though this journal contains no plant notes, it records the Indian vocabulary for the mountain peaks, based on first-hand information from Indian guides. The detailed ethnobotanical vocabulary for plant medicines and food of the native peoples recorded in his unpublished journals indicate that Gorman was among the earliest ethnographers of the Pacific Northwest. He also was cultivating relationships with like-minded men. His journal reports the following encounter upon returning from Yes Bay in 1892:

> *"March 27....1:30 P.M. arr. in Seattle.... — went to Prof. O. B. Johnson's then to the Y. Nr. Society's* [Young Naturalists Society] *with Chas. V. Piper* [a member] *- he has had an offer from Dr. [E. L.] Greene, to accompany an expettn [sic] to Alaska as botanist...."* (Gorman 1892).



SEVEN NEW SPECIES.

Important Botanical Discoveries by Martin Gorman.

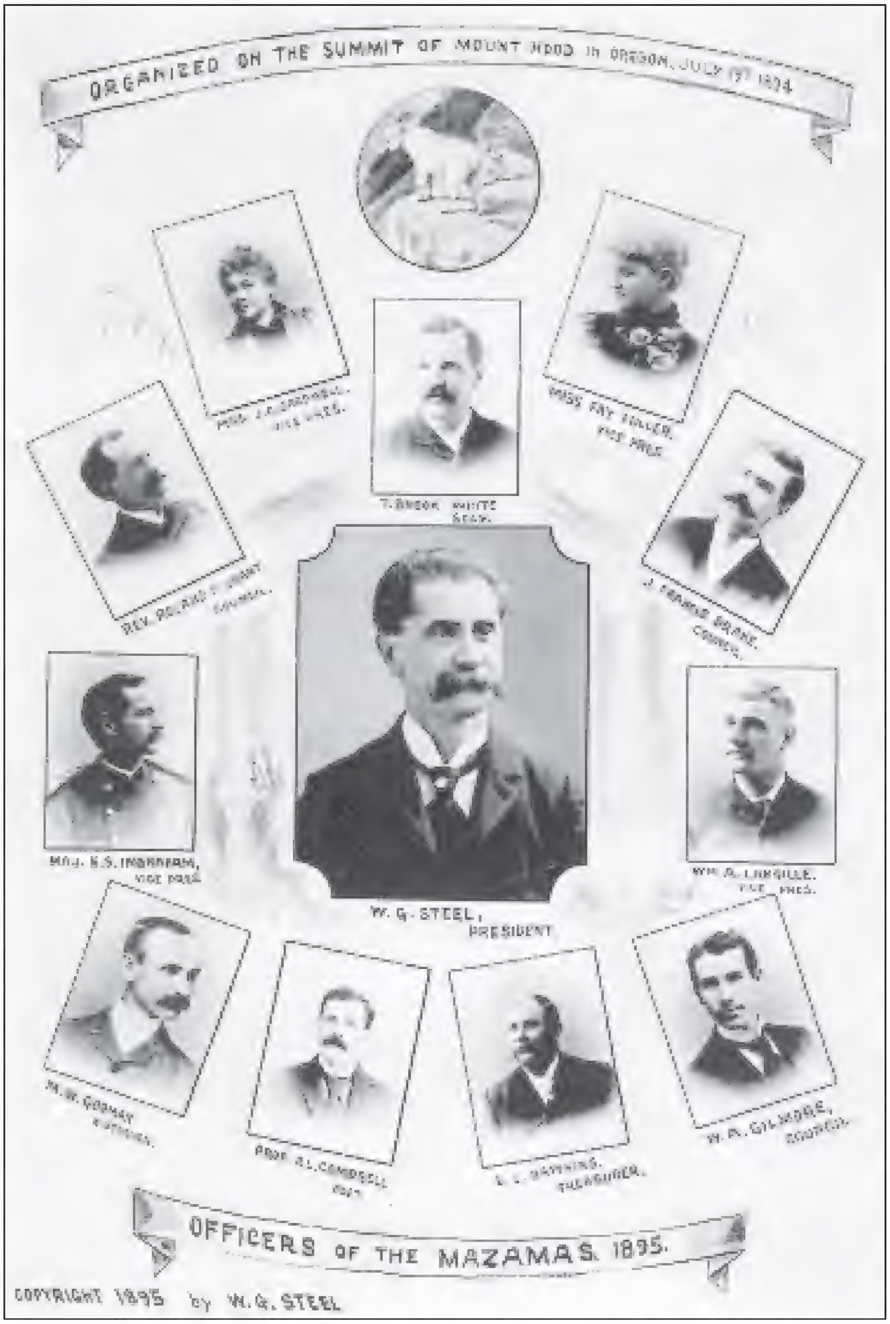
—O. 3-5-1900.

Martin W. Gorman, the well-known botanist, who made quite a collection of plants on the Yukon last year, sent a set of his specimens East last Fall. They have been examined by Dr. Green, a specialist, connected with the Agricultural Department, who reports to Mr. Gorman that he has found seven new species of plants among them. Only a botanist can understand how pleasing this is to Mr. Gorman. There are not many plants left undiscovered in any accessible place in this country, and it is a long time since any botanist has discovered so many new species on one trip as Mr. Gorman has. It will be remembered that Mr. Gorman made another collection in a different part of Alaska, while he was there, which was spoiled, when he came near being drowned and his companion was drowned by the wrecking of their boat. Some of the specimens of the spoiled collection were sent East, and enough could be made out of them to show that there were a number of new species in the collection, but the specimens were too badly injured to be identified. However, to find seven new species on one trip is glory enough, and Mr. Gorman is satisfied.

"Seven New Species." *Oregonian*, 5 March 1900.

## The Mazamas

Gorman was a charter member and lifelong elder of the Mazama Mountaineering Club, Portland's alpine club. He had served as secretary of a small group that met in 1893 to plan for organizing a mountain climbers' club. Gorman was not present at the general meeting on the summit of Mt. Hood on July 19, 1894, during which 193 persons voted the Mazama club into existence. (The club was incorporated March 16, 1899.) W. G. Steel was elected as its first president, Gorman as its Historian. Gorman served on the Mazama governing board in various capacities over the years until his death. He attended many of the annual outings, frequently attended or led local walks, "lectured before the club on different occasions, and his botanical information was always


ORGANIZED ON THE SUMMIT OF MOUNT HOOD in OREGON, JULY 19th 1894
MISS FAY FULLER, VICE PRES.
T. BROOK WHITE SECY.
MAJ. E. S. INGRAHAM, VICE PRES.
W. G. STEEL, PRESIDENT
M. W. GORMAN HISTORIAN.
L. L. HAWKINS, TREASURER.
W. A. GILMORE, COUNCIL.
OFFICERS OF THE MAZAMAS. 1895.
COPYRIGHT 1895 by W. G. STEEL

Officers of the Mazamas, 1895. Photomontage courtesy of Special Collections and University Archives, University of Oregon, #AX 75.

M. W. GORMAN, J. T. DELANEY, C. W. JACKSON, C. B. EMMONS,
F. N. SMITH.
EN ROUTE TO THE KLONDIKE.
SKAGWAY, ALASKA. DEC. 27. 1898.

The Gold Seekers in Skagway (1898): Gorman, Delaney, Jackson, Emmons, and Smith. Courtesy of Special Collections and University Archives, University of Oregon, #710.

of great value to the members and freely given" (Glisan 1926).

In 1903, five Mazamas, including Gorman, took part in a climbing expedition to the Three Sisters. Middle Sister was designated as the "official climb;" it was decided that South Sister was for "more hardy climbers, and that the North Sister would be let severely alone" (Glisan 1926). On Friday, July 19, the fivesome (Gorman, Rodney L. Glisan, E. H. Loomis, E. P. Sheldon, and Col. L. L. Hawkins) started out from base camp on Middle Sister and succeeded in reaching the summit.

> *"Close to the top we deposited our copper box, avoiding the extreme summit, as we could see that the rocks were drilled by lightning, and a small copper box containing names, a sardine can and several other tin cans were perforated by repeated attacks of the same mysterious power. As dark clouds were gathering and we did not desire to meet the fate of the sardine can, we took a last lingering look at the wonderful panorama around us....and made our way down the mountain, carefully at first and then sliding down the steeper portions of the snow-fields, arriving at camp at 3:45"* (Glisan 1926).

On Monday, July 21, 1903, flushed by their success, a party of four (Sheldon, Loomis, Glisan and Gorman) started for North Sister, overriding their initial decision to avoid it. Glisan writes that on the way, "Gorman's botanizing instinct proving too strong, he decided to turn back...and joined Sheldon" (Glisan 1926). Glisan and Loomis continued the ascent to the top alone. Gorman's journal recorded 201 specimens for the climb.

## Alaska: Searching for gold, distracted by plants, and a brush with tragedy

Though he assisted in organizing the Mazama mountaineering club, the successor to the Oregon Alpine Club, Gorman missed the 1894 meeting at the summit of Mt. Hood because he was in Alaska, working the salmon harvest. He made subsequent trips to southeastern Alaska and western Canada through 1901, mainly to botanize, but in 1898-1899, his purpose was to explore for gold in the Yukon. With four friends, he arrived at Fort Selkirk, Yukon Territory, April 28, 1898. After acquiring equipment, provisions, and guides, the group undertook to prospect for gold on the White River, Selwyn River, and Cloaca Creek, penetrating "to a point on the White River 200 miles above its confluence with the Yukon" (Gorman 1898). It was an arduous trip. "Although wholly unprovided with facilities for pressing or drying specimens, 'the call,' as he [Gorman] often phrased it, 'was strong,'" (Nelson 1927) and he collected tirelessly during the trip. Most of his specimens were lost in a tragic accident resulting in the drowning of his sole companion at the time, a guide, and Gorman's own miraculous rescue by a wholly unexpected boatload of explorers.

The White River trip began July 22, when the group split up to explore, planning to rendezvous at the river camp on August 13. By August 20, only Gorman had appeared at the campsite, and his journal noted that he was picking huckleberries in a marsh below camp when he heard

> *"a shout from the west side of the river, which I take [to] be that of Al and hurry back to camp expecting the whole party to arr. soon....Went down along the sandbar & found Al sitting on the bank, hatless, shoeless, with dishevelled [sic] hair and beard, wild looking and utterly woe begone in appearance. In reply to my query - where are the boys? He ansd. 'Oh, Gorman, I am nearly dead. I have had nothing to eat for 3 days.' .... we went slowly to camp. I got him something to eat, we turn [in] at 8:30 PM. and it was getting quite cold. He then related some of his experiences from [when] he left me on Aug 7...".*

On August 22nd, Gorman and Al attempted to walk out of the forest, but, due to Al's weakened condition, returned the first day to camp. Because Al was sick and unable to work, Gorman by himself felled logs and built a raft, upon which they undertook to float down the White River to civilization. The river was swift, cold, and full of drift piles and snags. Nearly out of provisions, both were weak, cold, and hungry. To make matters worse, they got wet and lost supplies each time the raft caught on a snag. Finally, at 10:20 a.m. on August 30, their raft wedged hard against the roots of a huge snag. The water poured over the raft, "wetting our blankets, knapsack, etc., carrying away our cooking utensils and gradually floating off our upper deck." After over two hours of trying to free the raft with a hatchet which slipped out of his benumbed hands, Al struck out for the shore. Gorman's journal records their harrowing last moments together in strangely matter-of-fact prose that was typical of him:

> *"[Al] tried to carry the knapsack but said it was too heavy - we then took out the balance of our flour, about 2 to 3 lbs. the 2 lb. of tea & the 2 plates & about 2 PM. he took a pole & tried to go across the 1st of the (snags) between us & the E. bank, but lost his footing at once then let the pole go and & then the pack. I called out to him to stand up, but he seemed benumbed and stupefied and our faithful service to each other for the last 12 days and our struggles together were a thing of the past.*
>
> *"My situation now became desperate, but I still had hope for succor or getting (?) ashore as best I could and put my (?) and 2 spoons in my pockets, strapped my extra pr. of socks to my waist, took my staff and sounded the depth of the water. I got back on to the snag again and at 2:15 PM. to [my] inexpressible delight I saw a man standing on a point half a mile down on the E. bank. I called loudly for help & soon saw two other men appear around the point [in] a boat. They arrived where I was at 2:30 PM. and I was soon in their boat with my [?] and my long vigil of 4 hours & 10 minutes on a submerged raft with the cold muddy waters surging about me was at an end…."* (Gorman 1898).

Gorman reached Dawson on September 7, meeting J. J. Delaney. By September 9, the remaining adventurers reached Dawson, and reunited, they all arrived back at Port Townsend, Washington, on October 9. Before he left Dawson, Gorman wrote an account of Al's death for the *Dawson Daily News*.

Gorman's journal for 1898-1899 contains two plant lists from March and April, some noted without numbers. It also records an English-Tinni (the Tinni are a First People tribe of the Canadian Northwest) vocabulary, alphabetically arranged, created with the assistance of Ayansor Jons of Schwarka, a Selkirk Valley Indian from British Columbia, Canada. There are also two additional Canadian plant lists: one for the Yukon Valley covering April-September 1899 and another list, location not given, for September-October. Also included are a tree list, containing details of characteristics for each species; a table of distances in Alaska; and a list of native names for Yukon geographic features and their derivation. Gorman was indeed an active ethnobotanist, recording native nomenclature and uses for local plants whenever he had opportunity.

During the summers of 1901 and 1902, Gorman collected in southern Alaska at Iliamna Bay, Chalka. During the second summer he also recorded details of soil characteristics, climate, and topography in his journal as well as plants used by native peoples and their practices. He also included notes detailing effects of a major fire that had occurred that year and made a botanical survey of the area.

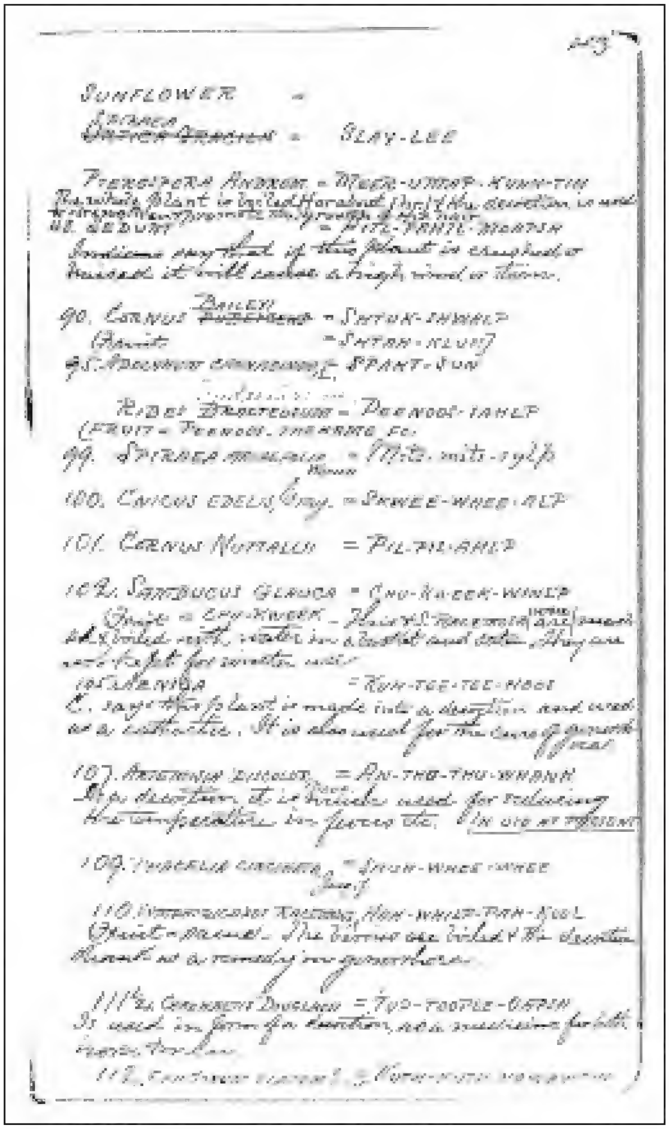
## Collecting trips in Oregon and Washington

As the years went by, Gorman collected closer and closer to home. It is not clear whether this was because of age-related physical limitations or because full time employment gave him little free time to travel. He may have been influenced by direction from C. V. Piper for whom he was collecting, or by increasing interest by botanists and the public in the flora of the Oregon Territory. His journals document a lengthy series of collecting trips, excerpted as follows:

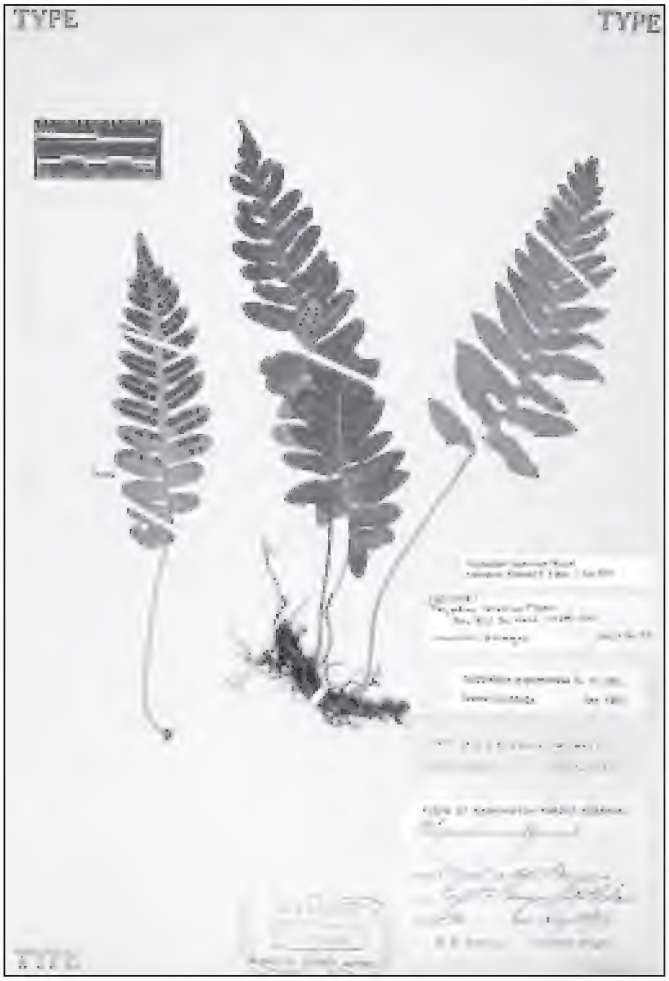
During late April 1895 he made a three-day trip to The Dalles with botanist Thomas Jefferson Howell and J. Francis (Frank) Drake, M.D., a Mazama member, and he also collected at Mosier and Klickitat, before leaving for Alaska in May.

In early summer 1896, Gorman collected in eastern Oregon and Washington. From May 16 through 19, he was at Wallula and Walla Walla and during the same month in the Umatilla National Forest near Pendleton and at Bates, Oregon (NE John Day), Grant County. His May 16 journal entry is entitled "Plant List, Eastern Oregon." In August 1896, he collected in southern Oregon listing the following sites: Dead Indian Road, Rogue River, and Crater Lake.

On August 5, 1897, Gorman wrote to his friend Thomas Howell from Seattle, describing his ascent of Mt. Rainier and the high winds on Nisqually Glacier. In this letter he also continued their discussion concerning "the second fascicle" of



Food Plants of the Northwest - A Tinni Vocabulary, excerpted from Gorman's 1888-1889 notebook. Courtesy of Special Collections and University Archives, University of Oregon, #169.



*Polypodium hesperium* Maxon. Isotype. Courtesy of Oregon State University Herbarium and the OSU Valley Library, #1438)

Howell's A Flora of Northwest America (a portion of the Flora initially missing from the volume first offered for sale, due to a printer's error), and mentioned that he was on his way north. His journal records collecting at Lake Chelan and Stehekin in Washington from August 1 to September 11 of 1897. There in Coyote Canyon he collected the type specimen of *Polypodium hesperium*, named by Maxon of the Smithsonian. It is also in this journal that he began to number his plant specimens and continued his practice of taking ethnographic notes.

> *[1897] "12:30 P.M. Arr. In Camp, tired hot & thirsty.... 4.- P.M. Wapato Charlie [a Chelan Indian] came into camp and I paid him $1.00 for information regarding names and uses of the plants which I have collected. He knew the names of all plants which they use & also of a few others, but had forgotten the name of several and of many he had no name. I kept him occupied at this task until 6:30 P.M. when we had to stop although not quite finished.*" (Gorman 1897).

This entry is followed by a glossary consisting of six animals and seventeen plants, with notes on their uses by indigenous peoples, examples of which follow.

> *"Tamarack,* Chuh-kool-uh *or* chuk-woo-luh*: The bark, branchlets and foliage are boiled for about 2 an hour and the decoction drank in colds and fevers. A favorite remedy....Pterospora androm,* Meer-umap-kuhn-tin*: The whole plant is boiled (for about 1 hr.) & the decoction is used to strengthen and promote the growth of his hair.*
>
> *Arnica,* Kuh-tee-tee-hoos*: C. says this plant is made into a decoction and used as a cathartic. It is also used for the cure of gonorrhea...."* (Gorman 1897).

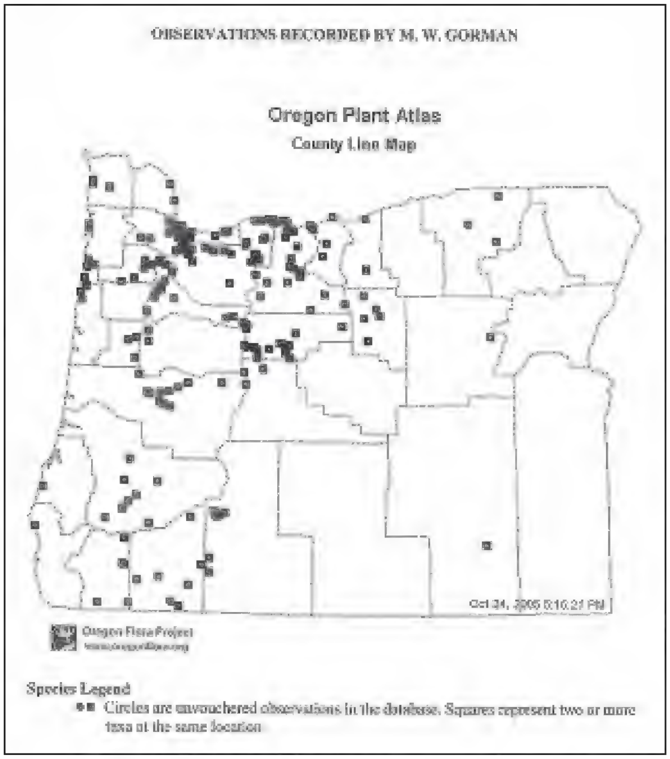
In June and November of 1903, Gorman recorded ten specimens from the Portland area.

When visiting Cardwell's with a Dr. Barton in March 1906, Gorman's journal noted the effect of the recent cold spell on both native and introduced trees. Gorman was at Mt. Baker, Washington, July 27 to August 9, 1906, collecting and recording plant specimens. He joined the Mazama August ascent of the southwest side of Mt. Baker specifically to collect that slope's flora, returning with 122 collections.

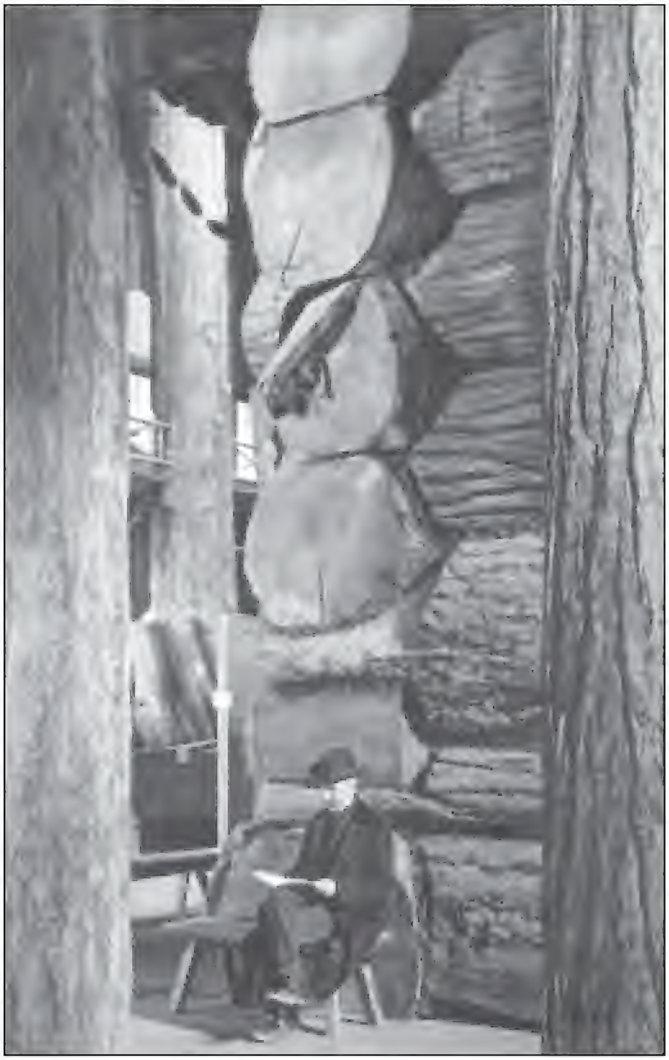
In October 1914, Glisan and Gorman left Portland for Astoria and the north coast of Oregon to climb and botanize Saddle Mountain, as well as to photograph a Douglas fir tree reported to be the largest in Oregon. On Friday, October 23, having secured a team and buggy, they arrived at the West Cooperage Camp on the road to Jewell at 10:45 a.m. They searched for the gigantic fir along the abandoned roads and along a road currently under construction, but "failed to find the 14 ft. 9 in. Fir mentioned by cruiser Riley" (Glisan 1915). The following day, they climbed Saddle Mountain and collected the type specimen for Saxifraga occcidentalis var. latiopetula L. C. Hitchc.

Shortly thereafter he assumed duties as custodian of the Forestry Building in Portland.

In April 1915, Gorman again surveyed the flora of Portland and its vicinity, intending to document the growing incursion of non-natives into the Portland area. He also made another trip to Saddle Mountain, collecting another 236 specimens.


OBSERVATIONS RECORDED BY M. W. GORMAN
Oregon Plant Atlas
County Line Map
Oct 24, 2005 8:16:21 PM
Oregon Flora Project
Species Legend
Circles are unvouchered observations in the database. Squares represent two or more taxa at the same location

Gorman's Collections in Oregon. Courtesy of Oregon Plant Atlas Project.



M. W. Gorman at his station in the Forestry Building in the 1920s. Courtesy of Special Collections and University Archives, University of Oregon, #169.

In 1916, Gorman drove a Ford car for a collecting trip in the Pendleton area, camping along the 994-mile round trip.

In 1922 he repeated his survey of Portland plants, comparing his findings with earlier surveys and noted the increase of "foreign species." On April 16 of that year, he also collected at Hood River, on the Oregon side of the Columbia River and may have visited his good friend Louis Henderson who had an apple orchard there.

On April 4, 1926, at the age of 73, Gorman, along with Cinita Numan, led a local walk of 25 persons to Washington Park-Mountain View Park. From April to July 1926 (his last summer), Gorman conducted a plant survey of Yamhill County, Oregon, adding #7521-7765 to his list.

### Forestry building custodian

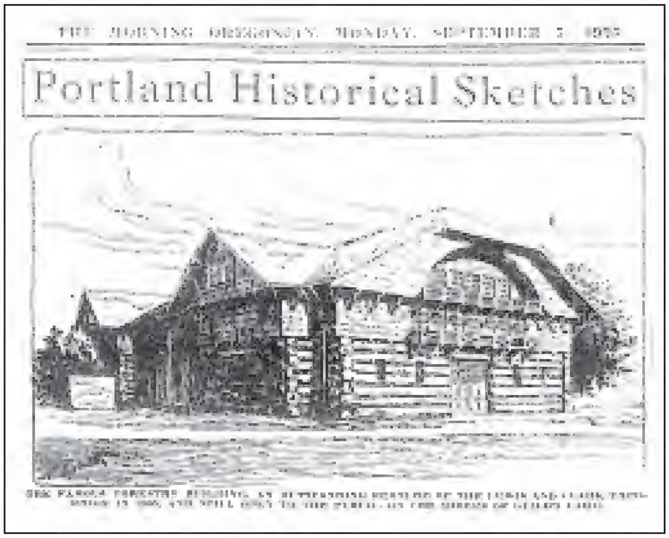
The Forestry Building, constructed of massive old growth Douglas fir, was acquired by the Portland Parks Bureau from the Lewis and Clark Exposition of 1906 in Portland as a permanent lumber exhibit open to the public. Hence, it required staffing. Nominated by influential friends, Gorman was appointed its custodian, a position he maintained until his death. Although Albert R. Sweetser of the University of Oregon refers to Gorman as Secretary of the Oregon Forestry Association (which he may also have been) Gorman was listed on the city payroll as Custodian.

During the years of his Parks Bureau tenure, Gorman served under the direction of two superintendents. In the beginning under Superintendent Mische, Gorman appears to have had considerable management authority over the property. The building was heated by wood, ordered by Gorman, who also periodically requested supplies and maintenance services to the grounds and building, specifying work to be performed by Park Bureau staff and private contractors. Originally constructed as a temporary building with an estimated 25-year life expectancy, the Forestry Building over time became a white elephant to the Park Bureau. As the years went by, Gorman had difficulty getting grounds maintenance performed, minor repairs undertaken, and even sufficient wood to heat the building in the winter. In fact, he was once reprimanded by Superintendent C. P. Keyser in 1923 for doing yard maintenance himself, rather than being inside the building during visiting hours.

Never married, Gorman lived in a succession of boarding and rooming houses in Portland and is so listed by the Polk Directories for Portland,1886-1926. He did not reside at the Forestry Building, although he spent long hours there. Apparently he had little space in his living quarters for specimens. His entire residency in Portland was characterized sometimes as "rooms," sometimes as "bds," and in later years as "res." When first employed at the Forestry Building, he lived at 394 Columbia; at the end of his life, his home was at 221-13th (Polk City Directories).

### Importance to the botanical community

Martin Gorman is considered by many to be one of the seven pioneer resident botanists of the Northwest (along with Thomas Howell, William Cusick, Louis F. Henderson, John B. Leiberg, Wilhelm N. Suksdorf, and E. P. Sheldon). Although he collected extensively, Gorman's major contribution to northwest botany was that of a reviewer, critic, and enabler (Lang 1956). His support


Portland Historical Sketches

"The Old Forestry Building." Pen and ink sketch, *The Morning Oregonian*, Monday, 7 September 1925.

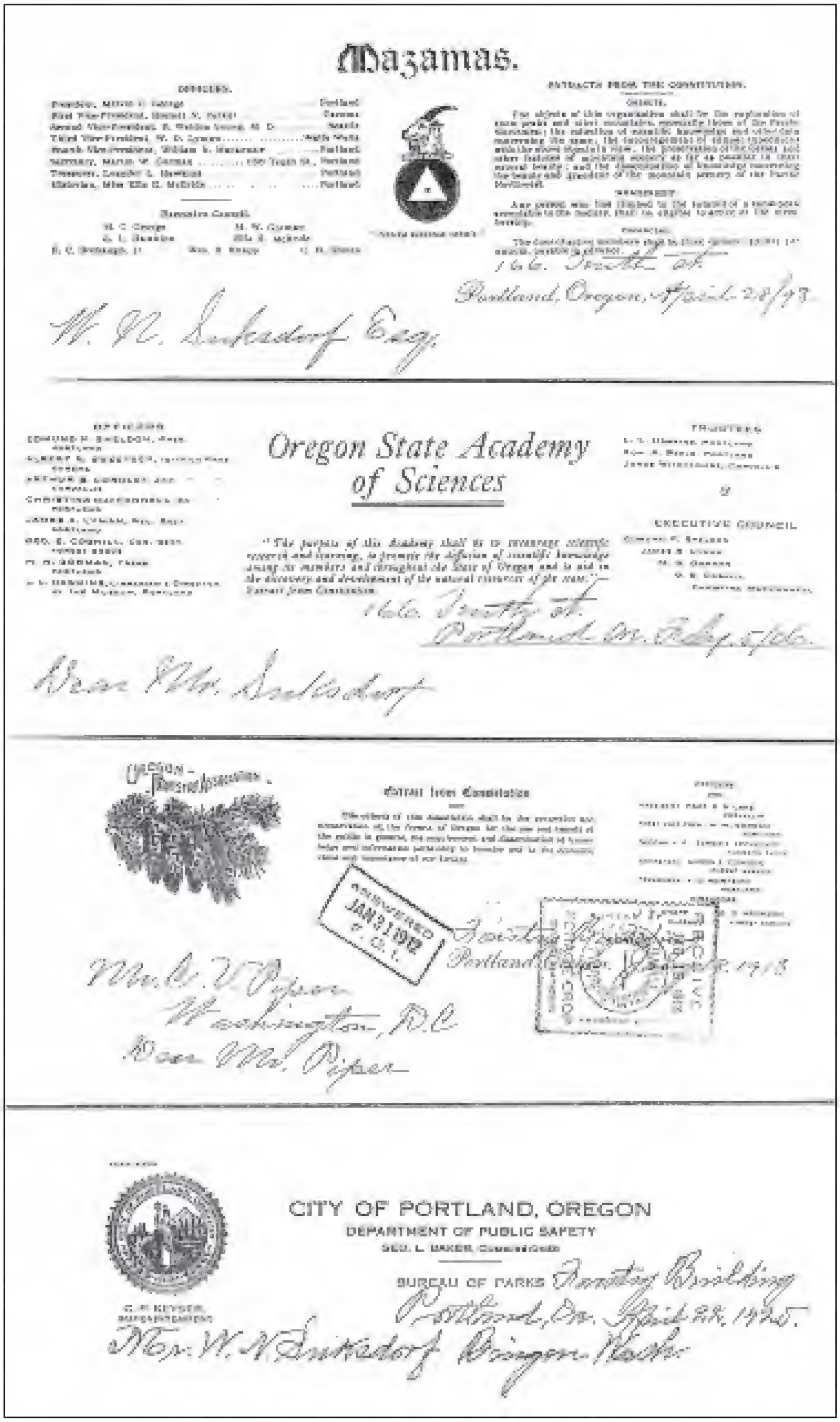
of Thomas Howell was inestimable. He read and carefully edited the proofs of Howell's A Flora of Northwest America (1897), the first comprehensive flora of the Northwest. According to one of Gorman's obituaries, "Without Gorman's meticulous attention, Howell's work would have seemed crude and amateurish, riddled with grammatical errors" (Wagner 1994).

After Asa Gray died in 1888, Thomas Howell, despite only six months of formal schooling, began to publish his own descriptions of new plants. He became fast friends with Gorman, who spent many hours editing Howell's Flora, which appeared between 1887 and1903. Later, Gorman and Howell worked together on a new edition of the Flora, in spite of Howell's poor health. After Howell's death in 1912, Gorman wrote to Charles V. Piper,

> *"....in May 1910 Mr. Howell and myself had a talk about a 'school and college ed.' of his Flora and decided to get it out together. ...We expected to be able to finish the manuscript in 6 months, but found the work much greater than we had calculated on at first...We then came to a difficulty viz: the large number of grasses and sedges whose range had been extended into our territory since his book was issued...I persuaded him that we ought to add all the grasses and sedges and such new species recently described as we could... We made arrangements to go to the U. of O. in Eugene to look over certain species in the herbarium there, the very week that his final illness came on. ...I am yet uncertain what to do about the Manus[cript]. If I could get some one to work up the additional grasses and sedges uniform with what we have already done, I think I can do the rest myself....The two persons that I consider best fitted are yourself and Aven Nelson of Laramie, Wyoming....I am perfectly willing to turn over a copy of the manuscript, to send specimens of newly introduced plants and of one or two new sp such as Claytonia c-, and to assist in any way possible either of you that can undertake to help me finish it. I have not yet written to Nelson to this effect as I first wish to obtain the advice and judgment of yourself and Dr. Greene or yourself and Dr. Coville. ...Please write me fully on the subject...."* (Piper-Gorman Correspondence 1913).

Piper had no time for his faithful field collector and replied in part:

> *"....In conjunction with Professor Beattie, I have in press a flora of a considerable area of eastern Washington and adjacent Idaho, and have largely completed a similar flora for the region west of the Cascade Mountains....At the present time it would be out of the question for me to assist you, as I*



Mazamas.

OFFICERS.

Executive Council.

EXTRACTS FROM THE CONSTITUTION.

166. Tenth St.

Portland, Oregon, April 28/97

W. N. Suksdorf Esq.

OFFICERS

Oregon State Academy of Sciences

TRUSTEES

EXECUTIVE COUNCIL

"The purpose of this Academy shall be to encourage scientific research and learning, to promote the diffusion of scientific knowledge among its members and throughout the State of Oregon and to aid in the discovery and development of the natural resources of the state."—Extract from Constitution.

166. Tenth St.

Portland Or. Feb. 5/06.

Dear Mr. Suksdorf

Extract from Constitution

ANSWERED
JAN 31 1913

Forestry Bldg.

Portland, Oregon, 1913

Mr. C. V. Piper

Washington, D.C.

Dear Mr. Piper

CITY OF PORTLAND, OREGON

DEPARTMENT OF PUBLIC SAFETY

GEO. L. BAKER, Commissioner

BUREAU OF PARKS Forestry Building

Portland, Or. April 28, 1915.

C. P. KEYSER, SUPERINTENDENT

Mr. W. N. Suksdorf Bingen, Wash.

Letterheads used by M. W. Gorman in his correspondence. Courtesy of Holland Library, Washington State University.

> *have not the time that I can spare. Matters may shape themselves in the near future so that I could undertake the work in conjunction with you. ...there is certainly need of a good students flora for the whole region, and I trust it will be possible for you to carry the work through to completion"* (Piper-Gorman Correspondence 1913).

The revised Flora was not completed and the manuscript was lost. It is believed that it was among Howell's papers that were vandalized after his death.

Over the years, the Smithsonian Institution asked Gorman to correct and edit copy for many of their botanical publications. He conducted a lively nationwide correspondence with professional botanists, botany professors, and many other individuals interested in the botany of the region who came to him for advice and consultation. Among these were Charles V. Piper and R. Kent Beattie of the US Department of Agriculture, Albert R. Sweetser, Head of the Botany Department at the University of Oregon, 1909-1931, as well as Wilhelm Suksdorf, Harold St. John and Thomas Howell.

Gorman regularly sent duplicate specimens to the National Herbarium in Washington, DC. His were the first contemporary collections received by that herbarium from the Pacific Northwest. He furnished specimens free of charge to local botanists as well as to various private and public herbaria. For years he identified plant species at hand for associates and the general public. Gorman was a joiner and an organization man as well, as evidenced by the various letterheads he employed over the years. He was a member of the Portland Audubon Society. However, "[he] was not well known outside the region because he did not collect plants for sale" (Wagner 1994) nor did he publish a flora. Gorman's own mounted specimens were sent to the University of Oregon Herbarium, annotated and donated to the general collection of Louis F. Henderson. Currently, 705 specimens from the Gorman collection, including six type specimens, are listed in the data base of the Oregon State University Herbarium (OSC) in Corvallis (OSU Herbarium 2005). Gorman's type specimen for *Saxifraga occidentalis* var. *latiopetiolata* C.H. Hitchc. (Hitchcock *et al.* 1977) is one of two specimen credited to him in the University of Washington Herbarium (Collections Manager, pers. comm. 2004).

Gorman was also very successful in persuading outstanding botanists of the time to provide feature articles for *Mazama*, the periodic bulletin of the Mazamas which became its yearly Annual.

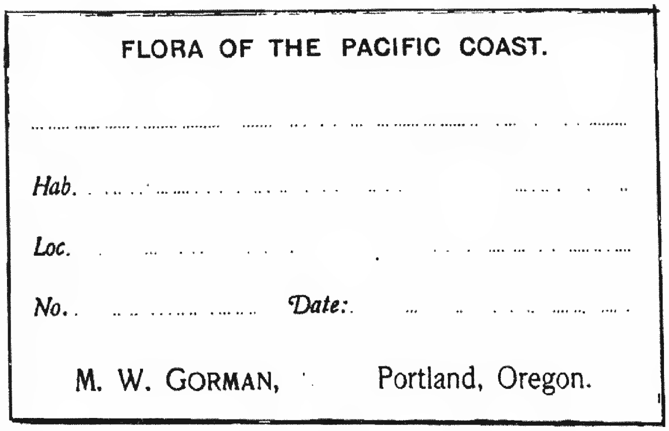
Further indications of Gorman's cachet at the time in the botanical world of the northwest are contained in the following letters for the times. On January 13, 1918, amateur botanist J. C. Nelson, at that time principal of the Senior High School in Salem, Oregon, and a close friend of Gorman's, asked Gorman to name either Nelson himself or Albert Sweetser the recipient of Gorman's botanical papers and personal herbarium. On November 5, 1919, Gorman wrote to Sweetser at the University of Oregon, drawing his attention to two cases of mounted specimens in the University herbarium damaged by insects. The specimens in the cases included those collected by Francis Y. Drake (a fellow Mazama), Louis Henderson, and by Gorman himself. On September 29, 1924, Gorman wrote Sweetser, then Chair of the University of Oregon's Department of Botany, in support of the appointment of Louis F. Henderson as Curator of the University herbarium. Helping to bring the 71-year old, but still vigorous, Henderson to the University of Oregon was another of Gorman's important services to the scientific world. Henderson had expressed interest in the position at a proposed salary of $125 per month, conditional upon an improvement in the herbarium storage facilities. He specified the "very best insect-proof cases." In this letter, Gorman indicated that he had agreed to solicit donations for this purpose (Gorman 1924). Henderson observed in his later autobiography:

> *"Mr. Biddle* [Henry J. Biddle, a close personal friend of Gorman] *put up $300 himself and secured a like amount from A. L. Mills, the wife of George Goode, E. S. Collins, Henry Failing, the David Thompson Estate, Henry J. Corbett, Rodney Glissan* [*sic*], *C. F. Adams and W. B. Ayer, with which 10 splendid metal cases were secured in which to store our valuable specimens"* (Love 2001).

It is not known if Gorman himself contributed funds.

Though passionate about plants, Gorman was above all a naturalist, interested in land forms, soils, and plant communities, with a keen interest in human interaction with the natural world. "To the end of his life his botanical interest was chiefly directed toward native trees and shrubs; but he collected everything, and devoted a large part of his time to making determinations for his many correspondents" (Nelson 1927). "Gorman's botanical enthusiasm was contagious....He was ready at all times to identify the plants and flowers for all interested, especially the school children. Everybody went to him, young and old" (Glisan 1926). "His little room in the [Forestry] building filled to overflowing with books, papers and specimens, was the unfailing resort of all botanists who visited Portland" (Nelson 1927). Thus he was described at his death by old friends and associates.

Though a fluent speaker and writer, Gorman wrote little for publication. Most of his botanical works were published in Mazama. "His own large collection he never wholly reduced to order, but by the terms of his will it became, along with his books and papers, the property of the University of Oregon" (Lang 1956). The specimen collection has now been transferred to the Oregon State University Herbarium and OSU Valley Library in Corvallis. Gorman's papers and photographs remain in the Special Collections of Knight Memorial Library, University of Oregon, Eugene.



FLORA OF THE PACIFIC COAST.

Hab.

Loc.

No. Date:

M. W. GORMAN, Portland, Oregon.

Gorman's Specimen Record (undated). Courtesy of Special Collections and University Archives, University of Oregon.

## Gorman's legacy

During his long residence in Portland, Gorman became well aware of the effects of increasing settlement and urbanization upon local vegetation. He railed against the displacement of native plants by "foreign species" brought in by settlers, railroads and in ship ballast. He clearly recognized that repeated collections of Portland flora over time would provide the basis for comparison of past and present vegetation. In fact, his 1915 survey served as the foundation for a current study of the historic and contemporary flora of Portland (Christy *et al.* 2006).

Portrait of Martin W. Gorman in the 1920s. Courtesy of Special Collections and University Archives, University of Oregon, #169.

Martin Woodlock Gorman was a talented amateur naturalist whose passion for plants and whose dedication to field botany made him a potent energizer in the development of a robust school of Northwest botany at the turn of the twentieth century. Like Thomas and Joseph Howell, his contemporaries, Gorman was not a professional botanist, but self-taught with high personal standards. He complemented, supported and stimulated contemporary academic botanists throughout the United States. He was also the pioneer ethnobotanist of the Pacific Northwest. Good-natured and generous to all, he inspired new generations of botanists with his enthusiasm for native plants.

Men actively interested in the flora of the Pacific Northwest who were part of Gorman's personal circle included:

**Rodney Lawrence Glisan** (1869-1934), scion of a prominent Portland family and civic leader after whom a street in Portland is named. He was a close friend of Gorman's and a devoted Mazaman who served as club photographer on many outings.

**Louis Forniquet Henderson** (1853-1942) reported in his autobiography that he climbed North Sister on July 3, 1881 (Love 2001). At that time Henderson was Principal and teacher of French, Latin, botany and elocution at Portland High School and an accomplished outdoorsman. Later, in 1924, with Gorman's assistance, he became Curator of the University of Oregon's Herbarium. Though disputed, the Mazamas still vigorously claim the "hitherto unrecorded" (*Morning Oregonian* 1903) ascent of North Sister on July 20, 1903, by two of its members to be the first documented ascent to the summit.

**Thomas Jefferson Howell** (1842-1912), a self-taught resident plant explorer who collected more new species of plants in Oregon than any other person (Wagner 1994). Encouraged by Asa Gray of Harvard University, Howell and his brother Joseph sent him their specimens for determination and publication. Both brothers tried to make a living as plant collectors, but Joseph soon returned to farm work. Thomas persisted for years in plant collecting all over Oregon, in spite of poverty. It is believed that Gorman befriended Howell more than once. He did arrange for and may have financed Howell's trip to Alaska.

**James Carlton Nelson** (1867-1944), was a contemporary and friend of Gorman, a fellow amateur botanist who also submitted specimens to C. V. Piper from the field. A career educator, he was associated with Salem High School and the Salem school district, in Oregon,1914-1944. He also knew Morton Peck of Willamette University. The OSU Herbarium contains 339 specimens collected by Nelson.

**Charles Vancouver Piper** (1867-1926), an agronomist, held a joint faculty appointment from 1892 to 1903 at what is now Washington State University at Pullman, Washington, teaching botany and zoology. After becoming head of his department, he moved to Washington, DC, as Agrostologist in Charge, Bureau of Plant Investigations, US Department of Agriculture, where he remained until his death in 1926. He solicited contributions of plant specimens from US collectors at large, offering in exchange free (franked) postage and plant determinations. For many years Gorman actively contributed plant specimens to Piper.

**Wilhelm Nicholas Suksdorf** (1867-1935), self-taught botanist, emigrated as a child from Germany to Iowa, briefly attended UC Berkeley in a science/agriculture course, settled in White Salmon, Washington, where he began to collect plants in 1875. Correspondence with Asa Gray at Harvard resulted in an invitation to join Gray as a paid assistant, but he left in 1888 due to health problems. Suksdorf then settled with his brothers in Bingen, Washington, where he continued to collect and sell plant specimens, and to correspond with Gorman, Alice Eastwood, and others. A "splitter" and dedicated field botanist uneasy with his command of English, he published his findings regularly in German journals and founded his own publication, *Werenda.*

## Chronology of Publications by Martin W. Gorman

**Mazama**

Gorman, M. W. *Historian's Report for 1895* (1896):49.

Gorman, M. W. *Report on the Name "Mazama"* (1896) 5-9.

Gorman, M. W. *Outing on Mount Adams 1895* (2nd Annual) (1896) 49.

Gorman, Martin W. *Mazamas: A Record of Mountaineering of the Pacific Northwest* (1897) 1:2 (Crater Lake Number).

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*List of Plants in the Vicinity of Portland, Oregon.* undated ms., ca. 1925

*Food Plants of the Indian Tribes of the Northwest.* undated ms.

*Important Events in the History of NW Botany.* undated ms.

*List of Native Plants Suitable for Cultivation Arranged According to the Natural System.* undated ms.

*A List of the Shrubs and Undershrubs of Oregon.* undated ms.

There is also a variety of observations, ethnic information and lists recorded in his various journals, supplementing his daily record of activities and plants collected.

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# PLANT OF THE YEAR

# Oregon Grape (*Berberis aquifolium*), Our State Flower

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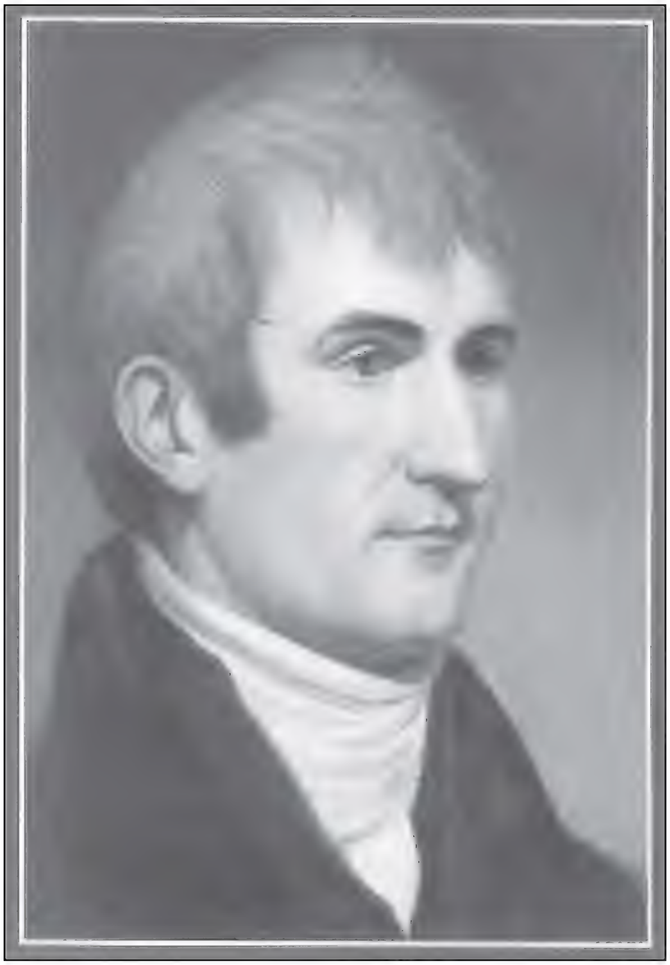
*"...two species of evergreen shrubs I first met with at the grand rapids of the Columbia... I do not know the fruit or flower of either. the 1st resembles the plant common to many parts of the U'States called the mountain holley"* – Meriwether Lewis' journal entry for February 12, 1806 with his first detailed description of Oregon grape



Meriwether Lewis. Portrait painted by Charles Wilson Peale in 1807, two years before Lewis' death (by suicide) in 1809. The original painting resides in the Independence National Historical Park Collection, National Park Service. Lewis died five years before the names of the plants he collected were published by Frederick Pursh in *Flora Americae Septentrionalis*.

Approximately 200 years ago, on April 11, 1806, Meriwether Lewis collected an evergreen shrub beside the Columbia River, which he referred to in his journal as "mountain holley" (Moulton 2003). Lewis had discovered the species along the river during a relatively rapid descent the previous autumn. He took advantage of the miserable winter spent at rainy Fort Clatsop to record observations from the trip in his journal, including the first reference to Oregon grape (above). In the early spring of 1806, when the Corps of Discovery was traveling back up the great River of the West, many plants were flowering, and Lewis was looking for better specimens of plants he had noted during the journey west. The day he collected two species of "mountain holley" (*Berberis aquifolium* and *B. nervosa*) was spent beside the river in today's Washington state, opposite what is now Hood River County's Cascade Locks. It was a particularly troublesome time for the expedition. The men were complaining of intense fatigue each evening due to the laborious up-river treks, during which they battled the strong currents and thundering rapids that springtime brought to the undammed Columbia.

Not only were they exhausted, but the men had to tolerate constant scrutiny by natives who ridiculed and threw stones at them. Lewis considered the "Wah-clel-lars" tribe villainous, because of their menacing actions. The thieves stole what they could from Lewis' men, unsuccessfully tried to rob their camp of tools, and then proceeded to make off with Lewis' beloved black Newfoundland dog, Seaman. Lewis sent three of his brigade to track the thieves and the men later returned with the dog. After breaking camp to continue up-river, the explorers encountered violent rapids where they lost one of their canoes. Because they needed a replacement to continue the expedition, the group was left with no choice but to barter with the natives whom Lewis feared would charge "an extravagant price." Despite turmoil and exhaustion, Lewis managed to collect plant eleven specimens, mostly on the day Seaman was stolen, including the one that later became known as *Berberis aquifolium*.

## Oregon state flower

It is fitting that less than a hundred years after these exciting events, Oregon grape was chosen as the state flower for Oregon. The committee that nominated the species to represent Oregon met near Hood River, close to the spot where Lewis first documented his "mountain holley." Attempts to choose a state

Flowers of Oregon grape: note exserted flower stigmas. Photo by Bob Vos.

flower had been initiated by the Oregon Horticultural Society in 1890; however, this body failed to reach a consensus after two years of wrangling. In 1892, George Henry Himes presented a motion in Hood River once again proposing that Oregon grape be our state's representative flower. On July 18, the committee agreed and forwarded the nomination to the state legislature. There, the Oregon Federation of Women's Clubs lobbied nearly a decade for its acceptance. At last, during the twentieth Regular Session of the Legislative Assembly of January 30 and 31, 1899, resolution number four was passed, declaring that Oregon had an official state flower, *Berberis Aquifolium* [*sic*], Oregon grape (State of Oregon 2006).

## Taxonomy and ecology

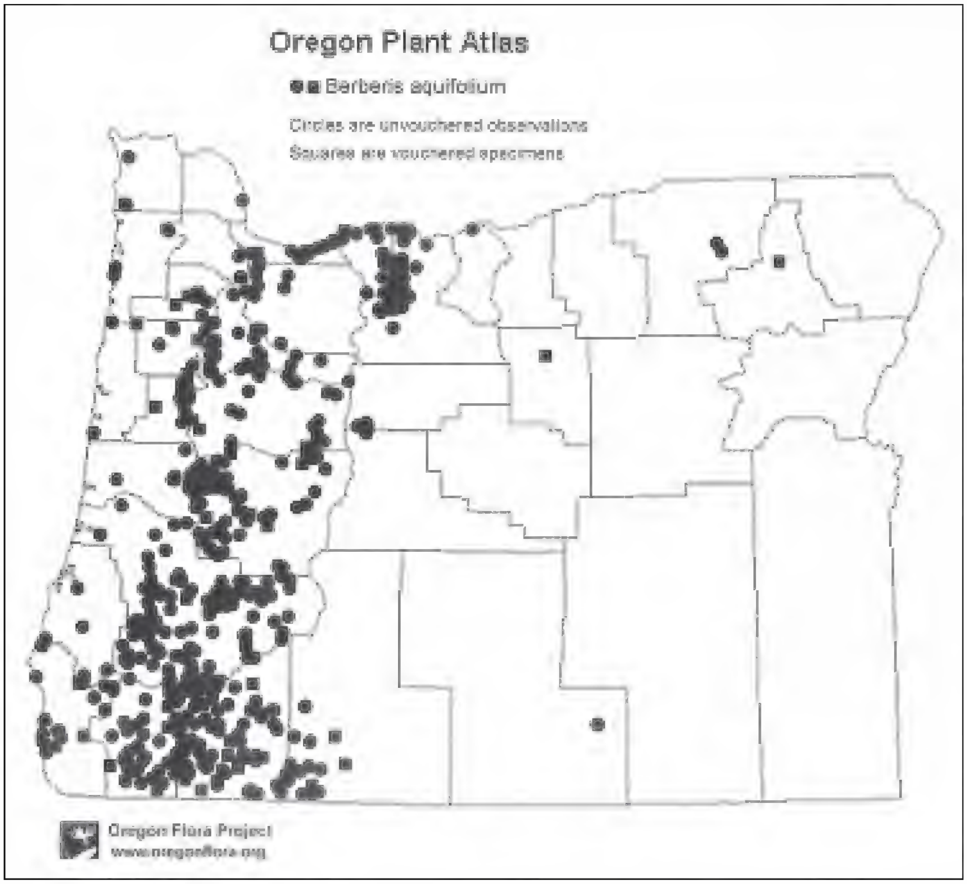
*Berberis* is the type genus for the plant family Berberidaceae, an ancestral family in the order Ranunculales (Judd *et al.* 1999), represented by 16 genera and approximately 670 species worldwide (Hickman 1993). In the Northwest, we have three genera in the family: *Achlys, Berberis,* and *Vancouveria*. Of these perennial genera, *Berberis* is the only one whose members are woody shrubs. At first glance, it may not be obvious what characteristics place all these plants in the same family; they differ in habit, leaf structure, inflorescence, flower color, and type of fruit. To make the connection one must look closely into the flower, specifically at the anthers. While most flowers have anthers that shed pollen through longitudinal slits, these genera release their pollen through a pair of uplifted, flap-like valves (Hitchcock and Cronquist 1973).

Of the approximately 600 *Berberis* species in the world, three grow in the Pacific Northwest. These are tall Oregon grape (*B. aquifolium*), mountain Oregon grape (*B. nervosa*), and creeping Oregon grape (*B. repens*). *Berberis aquifolium* is easily distinguished from the others by a few readily visible characteristics. The most consistent way to separate *B. aquifolium* from *B. nervosa* is the difference in the leaves; *B. aquifolium* has 5 to 9 leaflets on each leaf, whereas *B. nervosa* has 9 to 19. The venation of the leaflets is also distinctive, with *B. aquifolium* having pinnately branched veins, while those of *B. nervosa* are palmate. While *B. aquifolium* shares leaflet number and venation pattern with *B. repens*, these two species can be separated by *B. repens'* generally shorter habit, its more numerous, but less prominent leaflet serrations, and its restriction to areas east of the Cascade Mountains. *Berberis aquifolium* is widespread in the Northwest, ranging from British Columbia to California, and from the Pacific coast to the eastern base of the Cascades. It is common in open coniferous forest, oak woodlands, and riparian zones.

Several species of moths, bees, wasps, and flies visit the brilliant yellow flowers of Oregon grape and are potential pollinators (Landolt and Smithhisler 2003). Its relatively early blooming period may make it an important spring nectar source. Oregon grape has sensitive anthers that spring forward and deposit pollen on the heads of the insects that visit its flowers in search of nectar (Judd *et al.* 1999). Thus, the insects, lured by an early spring meal, unwittingly aid the reproductive success of the plant! This phenomenon can be witnessed by touching the stamens and watching them move.

## Berberis or Mahonia?

While Hitchcock, Jepson, and the authors of *Flora of North America* (1997) all agree that *Berberis aquifolium* is the appropriate name for Oregon grape, another generic name, *Mahonia,* remains a synonym in common use, including the USDA P.L.A.N.T.S. website. The Oregon governor's mansion is called Mahonia Hall. Two Latin names for the same plant? The naming of this plant has an interesting history. After being collected by Meriwether Lewis, Oregon grape was described and named by German botanist, Frederick Pursh (1774-1820). Pursh originally designated it *Lewisia ilicifolia*, believing it was a new genus and wishing to honor Captain Meriwether Lewis (Pursh 1814; Reveal 2000). However, after further study Pursh realized the genus had previously been described by Linnaeus, as *Berberis*. Pursh's specific epithet, *ilicifolia,* came from the similarity of the Oregon grape leaflets to the leaves of holly (*Ilex*). In discarding his original name, Pursh also chose a more descriptive species name, *aquifolium*, meaning "spiny leaved," an epithet it shares with English holly (*Ilex aquifolium*). In fact, Oregon holly is another common name for Oregon grape.



Range of *Berberis aquifolium* in Oregon based on current Oregon Flora Project data at the Oregon State University Herbarium in Corvallis (www.oregonflora.org).

Where does *Mahonia* come from? The genus *Mahonia* was later proposed by Thomas Nuttall (1786-1859) as a group distinct from *Berberis*; he named his new genus after the prominent horticulturist, Bernard McMahon (or M'Mahon, 1775-1816) (Reveal 2000). Nuttall's morphological justification for this division was based on leaf structure; other members of genus *Berberis (sensu strictu)* have simple leaves, while *Mahonia* have compound leaves (Moran 1982). While it may make morphological sense to consider *Mahonia* a distinct group, in terms of evolutionary relationships, neither *Berberis*, nor *Mahonia* represent monophyletic groupings (Kim *et al.* 2004; Moran 1982). It is believed that within the Berberidaceae, simple leaves are derived from compound leaves (Moran 1982). Thus, botanists prefer to keep *Mahonia* submerged within *Berberis* (Moran 1982), while horticulturists invariably refer to our Oregon grapes as *Mahonia.*

## Ethnobotany

Indigenous tribes along the Columbia River were very familiar with Oregon grape. In fact, all *Berberis* species were used by various native tribes; and, to the north, *Berberis aquifolium* was known to the Chehalis, Samish, Skagit, Swinomish, and Snohomish peoples (Gunther 1995). Each tribe had its own uses for the plant, but most utilized *Berberis* roots for their yellow dye, which was employed primarily to color woven materials such as baskets and mats. Because of its popularity in dying, the plant was frequently traded and bartered amongst the natives. The Makahs of the Olympic Peninsula traded for the plant since it was not found in their region; however they did not ingest it, calling the berries "raven food," and stating they "make children ill." Other tribes, such as the Chehalis, made a *Berberis* berry or rhizome infusion called "bitter brew" because of its bitter taste. This was used for stomach ailments such as ulcerations and digestive difficulties, or to induce appetite. The same brew was also considered to be a successful blood purifier, and to cure sore throats and coughs. A wash from the bark was made to rinse sores in the mouth and on the skin. The berries, both raw and cooked, were eaten by the Samish, Snohomish, and Swinomish people. Although ripe berries were available only during early summer, the Oregon natives stated the best time to pick the root and harvest bark was in the autumn. The tribespeople believed that collecting in the early morning at that time of year ensured greatest potency in the plant, so it could be stored and used for medicine during the winter.

Many of the traditional uses of Oregon grape are still employed by

Drawing of *Berberis aquifolium* by Frederick Pursh in his *Flora Americae Septentrionalis* in 1814. (The word *septentrionalis* refers to the seven stars of the Big Dipper and was a synonym for "north.")

herbalists. These include its use for gastrointestinal complaints, as a liver stimulant and as an anti-microbial (Cernakova and Kostalova 2002; Mills and Bone 2000; Moore 1993). The primary active constituent in Oregon grape is berberine, a widely occurring alkaloid also found in goldenseal (*Hydrastis canadensis*) and goldthread (*Coptis laciniata*) (Mills and Bone 2000).

## Landscaping with Oregon Grape

*Berberis aquifolium* is a wonderful evergreen shrub for Northwest native gardens (Kruckeberg 1982). Many landscapers do not realize that this is the only evergreen shrub native to the floor of the Willamette Valley. The plant's handsome, shiny, dark leaves can accent any planting, whether used for a woodland setting, formal hedges, border plantings, or a background for deciduous shrubs. In early spring, Oregon grape bears delicate yellow inflorescences followed by clusters of dark blue fruit in the summer. These reproductive parts are not only pleasing to the human eye, but can also make your garden attractive to various insect pollinators and birds. *Berberis aquifolium* grows best in well drained, moist, acidic soil, in shady locations, although full sun will not damage the plant if it is well watered through hot, dry seasons. Oregon grape can suffer if exposed to desiccating winds when the soil is dry. The shrub can be propagated by seeds and cuttings; however, vigorous plants for your garden are probably best obtained from a reputable native plant nursery. Certain horticultural varieties have been specialized for gardens, including Orange Flame, Mayhan, and Compacta. These are known for their size and color, but the native Oregon grape is still as colorful and beautiful as any variety.

## Conclusion

The months the Corps of Discovery spent on the Columbia River were full of challenges, each day's trials and triumphs different from those of the day before. Although Captain Meriwether Lewis did not foresee it, three species of the 290 specimens that he and Captain William Clark collected on their homeward trek in 1806 became the official emblems of three northwestern states. These are bitterroot (*Lewisia rediviva*) in Montana, mockorange (*Philadelphus lewisii*) in Idaho, and our own Oregon grape. Even though the latter is the only one not bearing its discoverer's name, we believe it is the best of the lot. We can enjoy its bright yellow flowers in spring, its rich blue fruits in summer and its glossy, evergreen leaves throughout the rain-drenched winter.

*Berberis aquifolium* Pursh. Note the pinnate veins in the leathery evergreen leaves. Photo by Bob Vos.

## Acknowledgments

We thank Gail Baker and Rhoda Love for their help and encouragement. Jerry Curry, Information Specialist at the Oregon State Library, provided detailed information on state flower designation by the legislature in 1899. Frank Lang reviewed the article and suggested valuable changes.

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# BOOK REVIEWS

## *California's Wild Gardens: A Guide to Favorite Botanical Sites*

**Edited by Phyllis M. Faber. 2005. 248 pages, 500 photographs, index. ISBN 0-520-24031-6. University of California Press. $34.95, paper.**

Oregonians are fortunate to live relatively close to an area where they can find nearly one-fourth of all the plant types in North America north of the Mexican border (more than 6,000 species). California's Wild Gardens–A Guide to Favorite Botanical Sites, serves as a tour guide to finding "botanical hot spots" throughout the various ecological regions of this large and diverse state.

This book showcases, with vivid photographic images, the abundance of California's native plants in their natural settings and offers a close up look at more than 100 special sites in the state. The book is divided into ecoregions where their distinctive ecology and botanical challenges are highlighted with lively writing by some of California's best biologists and ecologists. One can view spectacular landscapes and close ups of rare flora through high quality color photographs. Several botanically rich areas are described in each ecoregion.

This guide to some of California's favorite botanical sites is an excellent source to identify future travel destinations to see unusual flora and to learn about the basic ecology of the area before arriving. Tucked away in the narrative are suggestions for driving, hiking or walking opportunities to locate some of the sites discussed. The book is lacking in information as to the best calendar time line to visit the various sites. The California bloom stretches the calendar with the state's diversity in latitude, elevation and climate. It would have been nice to see a table or time frame showing the more favorable times to visit each ecoregion in order to witness some of the vivid wildflowers depicted in the book.

With its stunning photography and informative narrative, I would recommend this book anyone traveling to the state of California. It should inspire readers to further explore California's natural heritage and landscape's natural gardens. Since I often travel southward to the Golden State, I will use the information in this book to seek out roads less traveled and enhance my travel experiences by visiting some of the special places described.

*–Bob Korfhage, Siskiyou Chapter*

## *Wild orchids of the Pacific Northwest and Canadian Rockies.*

**by Paul Martin Brown with drawings by Stan Folsom. 2006. 289 pp., 290 color plates, 85 B&W illustrations, 69 maps, bibliography, glossary, index. ISBN 0-8130-2900-7. University Press of Florida. $29.95, paper.**

Live in the larger Pacific Northwest? Anywhere from southern Oregon to beyond the Arctic Circle, from the Rocky Mountains to the far out Aleutian Islands? Love our native orchids, or want to learn to love them? This just might be the book for you. Paul Martin Brown, member of the North American Native Orchid Alliance and founder and editor of The North American Native Orchid Journal, and a research associate University of Florida Herbarium at Gainesville has written several similar regional wild orchid books.

The book is nicely bound in a soft cover (Flexibound) with metric and English scales on the edge of the cover flaps. Each species is illustrated with some excellent color photographs mixed with less than perfect ones, and nice line and watercolor drawings by Stan Folsom. Distribution maps by Province or State are in color: blue, red, and green. The ocean is shown in blue, which unfortunately obscures the tiny blotches of green or red if the orchid is found in the Aleutian Islands. There are keys to genera and species with a complete discussion of each taxon.

His taxonomic treatment seems up-to-date, comparable with treatment of the Orchid Family in the Flora of North America: *Habenaria* is much reduced, for example, with former members of the genus moved to *Platanthera* and *Piperia*. This book includes 47 species, 1 subspecies, 10 varieties, 5 hybrids, and 62 forms. Brown described most of the forms (*forma* in taxonomic parlance) in the journal that he edits. The taxonomic category forma is used for trivial differences within a species, like flower color, that does not have any discernable geographic corollary. The North American Native Orchid Journal is a publication of the North American Native Orchid Alliance and is carried by only 13 libraries, mostly botanic gardens and institutes.

While an author based in Florida might give you pause for a local book, you will find that Brown has first-hand knowledge of our orchid flora. See Part 4, Orchid Hunting, which covers special geographic regions, including two in our state: the Columbia River Adventure and the Siskiyous and Southern Oregon.

I recommend this book to anyone interested in the wild orchids of the Pacific Northwest and Canadian Rockies. My complaints are as trivial as Brown's *forma*.

*–Frank A. Lang, Siskiyou Chapter*

## *Plants of Western Oregon, Washington & British Columbia*

**by Eugene Kozloff. 2005. 512 pages. 709 colored plates, line drawings, regional map. ISBN 0-88192-724-4. Timber Press, Inc. $65, hardback.**

"This is Eugene Kozloff," said the woman with the shade umbrella. And that is how Veva Stansell and I learned, in June 2001, that there was to be a new flora of western Oregon, Washington, and British Columbia that would include the southwest corner of our state. Veva and I were driving on Wimer Road along the west fork of the Illinois River, scouting serpentine areas for our "Siskiyou Wildflowers" class the following day, when we spotted a photographer and his assistant bent over a patch of bright red lilies. Naturally we stopped to meet our fellow botanists. Neither of us recognized the cameraman until his helper with the umbrella introduced him. Dr. Kozloff described his new project to us, and asked Veva for the name of the lily which she, with her intimate knowledge of the area, supplied—*Lilium bolanderi*. Perhaps the Wimer Road photo is the image in plate 668 of Kozloff's handsome and groundbreaking new regional flora.

In the five years since our chance encounter in Josephine County, Dr. Kozloff, who lives in Friday Harbor and is associated with the University of Washington marine labs, completed his research at herbaria in Seattle and Corvallis and found a publisher for his book, Timber Press. I was excited about the prospect of a reference that could be used west of the Cascades in BC, Washington, and Oregon. Perhaps at last we would be able take our students to botanize the diverse floras of Eight Dollar Mountain, Wimer Road, and Rough and Ready Creek without carrying a truck load of references!

Now this beautiful new book has appeared and my bottom-line advice to readers is—you will want to own it. I am not claiming it is perfect in every detail, but it will be a handsome addition to your botanical library, and I guarantee you will find it useful in many ways. The Kozloff volume does not pretend to be a new Flora of Oregon and will not take the place of the flora being prepared by the Oregon Flora Project at OSU. This book covers only the area between the Cascades and the Pacific Ocean; it does not provide range maps of species, and it has no electronic components. However, it is the first reference for this area that includes most of the newer plant names, and it is illustrated with luscious colored plates. I found the front material outstanding; the section on geography and geology is especially fine. Kozloff's philosophy is to bring the identification of plants into a realm where it is accessible to all. He has done away with many of the Latinate words and abbreviations students must learn in order to use Hitchcock and Cronquist's manual. And, as Aaron Liston of OSU recently wrote to me, Kozloff displays an "admirable taxonomic honesty seldom conveyed to the general public in floras." I agree with Aaron who further commented that Kozloff "avoids the old-fashioned authoritarian approach to science and introduces the concept of taxonomic uncertainty."

It is inevitable that the new book will be compared with the Hitchcock and Cronquist manual first published in 1973. The two floras are about the same size and weight, and contain approximately the same number of families. However, Hitchcock's manual contains 218 more pages than Kozloff's–pages that the older book puts to good use with genus descriptions and drawings. In comparing the two field guides, here is what I particularly admire about the new book: it includes southwest Oregon species, most of the new scientific names, a number of new family names, the majority of our introduced weeds. In addition, there are 709 very handsome colored plates and Kozloff uses a less challenging vocabulary than Hitchcock. I especially like his friendly and accessible introductory material.

On the other hand, there are certain features of Hitchcock and Cronquist I miss in the new book. Authorities for plant names are not used; this eliminates a sense of the history of a species. There are no genus descriptions and, since some of the keys are very long, one lacks information to confirm that one's keying was successful. Only a limited percentage of species are illustrated in Kozloff, whereas Hitchcock included a sketch of each taxon. (If Kozloff prepares a second edition, I urge him to add generic descriptions and at least one small sketch for each species.) It is too easy to lose one's way in Kozloff's very long key to "other Dicots and Monocots" which begins on page 75, going on for 11 pages with 109 pairs of leads–especially since pairs are not designated a and b. For example what I would call lead "12b" is 4 pages away from lead "12a," with no clue as to where to find it except to search. Gail Baker of Lane Community College and two of her advanced students also reported difficulties with some of the keys. However, I have used the new book to key approximately two dozen spring-blooming plants and have only two complaints: I had to plod through 12 pages and 106 pairs of leads to get to the mustard family! And while thorn-like short-shoots on our wild crabapple, *Malus fusca*, are not always obvious, this is the choice one must make in the key to Trees, Shrubs, and Vines on page 67.

My most important criticism involves the erroneous use of the word "saprophyte" to describe certain non-green Ericaceae and Orchidaceae. Many years ago the research of Dan Luoma and others at OSU showed that flowering plants are not saprophytic. Angiosperms that lack chlorophyll are obligate mycotrophs, meaning they obtain photosynthate from a nearby woody plant via a fungal partner. For years we have been asking students to annotate Hitchcock's manual with this note, and we found the same error in the new Gilkey. To see it once again perpetuated here is depressing.

Several specific errors have been reported. Dave Dobak's review in the Oregon Flora Newsletter for April 2006 listed the missing taxa; I will not repeat that list here. Frank Lang has noted that plate 667 is *Triantha occidentalis* rather than *Hastingia bracteosa*. Three family names, Brassicaceae, Convolvulaceae and Fumariaceae, are missing from the index. Kozloff himself has posted the following: Plate 196 is narrow-leaved clover not crimson clover. The drawing at the bottom of page145 is *Sonchus oleraceus*, common sow thistle, not *S. asper*. On page 299 captions are reversed. And on page 106 users need to add a second lead 22: "Achenes without a crown of scales–*Crepis*." However, let's face it, no flora of this size and complexity can be totally error-free in the first edition. Hitchcock and Cronquist brought out two subsequent editions with corrections; and Peck inserted two pages of errata in his 1941 *Manual of the Higher Plants of Oregon*.

Kozloff's effort deserves our attention; I strongly suggest you add this book to your botanical library. This new book allows us to botanize western Oregon with a single field manual that is admirably reader-friendly in terminology, up-to-date in taxonomy, and beautifully rich in color and images.

*–Rhoda Love, Emerald Chapter*

## *Green Inheritance: Saving the Plants of the World*

**by Anthony Huxley. 2005. 192 pages, 234 illustrations. ISBN 0-520-24359-5. University of California Press, paper.**

*Green Inheritance*, first published in the eighties with the help of the World Wildlife Fund and the World Conservation Union to launch programs for plant conservation, has been extensively updated in this new revision. The book offers a pragmatic message: in a world of 6.5 billion people and counting, plants must be conserved, not just for their own sake, but for the survival of humans as well. Huxley's "plants as resources" viewpoint puts a value on wild plant species for their crop improving genes, medicines, soil and watershed protection, climate stabilizing effects, foods, spices, perfumes, lumber, and fuels.

In addition to the author's very serious message for our times, *Green Inheritance* is also a beauty to behold; its large 9x10.5-inch format, gorgeous photographs, and botanical plates make it a volume you will be proud to display on your coffee table. Through numerous examples, the volume details our long and colorful relationship with plants, their gifts, and our dependence upon them. The history of crop plants, the spice trade routes, and our use of plant fibers such as cotton demonstrate the worth of plants. The chapter on "Green Medicine" details how much of the world depends on herbal remedies, how many of our drugs came from plants, and how local indigenous peoples are precious resources of knowledge about using plants.

For me, Huxley's most important message comes near the end: the warning that the genetic variability of the world's plants is now seriously threatened. Human effects on plant biodiversity are significant (1000x the background rate of extinction), many plant species are already extinct, and 75,000 more are in danger of vanishing. Have we forgotten the adage, "extinction is forever"? Man has not learned how to design genes from scratch for specific purposes; for example, if a fungus attacks a crop such as mustard seed, we must turn to wild mustard species to obtain anti-fungal genes.

In our lifetimes, as over-exploitation, loss of habitat, and invasive species threaten our wild plants, we are squandering our "green inheritance," leaving little for the future. Landraces—hardy, dependable, and locally adapted crop varieties that have survived centuries of climate fluctuations, pests, and diseases—are being swept aside by hybrid strains that require the farmer to buy seed each year and supply high inputs of fertilizer. To hold off the inevitable pests and diseases that attack the hybrid strains, the farmer must keep increasing pesticide applications, poisoning the land, and buy new hybrid strains in a cycle of dependence. Vast numbers of humans live in cities, alienated from the land, surrounded by patchworks of clearcuts and tree farms, and fed by vast monoculture crop fields.

We have a choice: turn our remaining natural landscapes first into cropland, and finally into barren wastes, or remember that plants are necessary for our very survival, and their gifts (genes) come from wild stock. *Green Inheritance* urges and galvanizes us to stop the degradation of our plant cover, heal the damage, and conserve what is left. The hard work of monitoring rare species and maintaining biodiversity reserves is required to help slow the rate of extinction and return harmony to the relationship between humans and plants.

*–David McClurg, Emerald Chapter*

## *Mimicking Nature's Fire: Restoring Fire-prone Forests of the West*

**by Stephen F. Arno and Carl E. Fiedler. 2005. 242 pages, illustrations, photographs, bibliographic references and index. ISBN 1-55963-142-2, Island Press, $24.95, paper.**

"Since only the kiss of flame is needed to rouse dormant seeds from decades-long sleep, is it not strange that botanists do not turn arsonists on occasion that some floral phoenix might arise from the ashes?" J.T. Howell, 1946, Sierra Club Bulletin 31.

As illustrated by this quote from renowned botanist, J.T. Howell, botanists have long held a fascination with fire and its stimulating effects on plant growth. Fire is vital to native plant reproduction and diversity in forests in Oregon and the western U.S. What changes have been caused by suppression of fire in these forests and what can and should be done about them? Stephen Arno (USDA Forest Service, retired) and Carl Fiedler (University of Montana), foresters based in Missoula, Montana, have addressed these important questions in this book. It is a relatively short book not meant to be a comprehensive reference on fire ecology in the west. How well do the forestry-based solutions described mimic the ecological effects of fire, particularly those vital to maintaining native plant diversity and regenerative processes?

The authors provide their assessment of the effects of fire suppression in the first section of the book and return to this theme repeatedly. They use dramatic terms to describe forests as imperiled due to lack of fire and in need of urgent treatment to reduce tree density and suppress fire severity. Their sentiments are familiar to those of us in forested regions of the western US, where fires are routinely reported as catastrophic even when the opposite is true; for example, the Yellowstone Fires. Arno and Fiedler apply negative effects of fire suppression very broadly even to subalpine forests, such as those in Yellowstone, naturally maintained by stand-replacing fire at intervals of a century or more. Grazing and logging are also discussed as causes of forest degradation, but are generally considered subordinate to fire suppression in influence. Uncertainties and variability in "natural" fire regimes, forest structure and the appropriateness of including past cultural fire in the concepts of historic range of variation are not addressed.

The authors argue an urgent need for action, and that options and funding are limited. They identify "restoration forestry" as the pragmatic solution, especially since it provides revenue. The approaches they present are offered as a way to "mimic" the effects of historical fire. However, many treatments described among the case studies that comprise the main section of the book have effects that do not mimic nature's fire. Some extreme examples that can be detrimental to native plant habitat, include "group selection" (1- to 2-acre patch cutting), salvage logging, mowing of native manzanita vegetation, and ripping of soil to offset compaction from heavy machinery used in some of the treatments.

Such mechanical disturbances clearly differ substantially from fire in the environmental conditions they create. They encourage the invasion and growth of exotic species that flourish with ground disturbances. Conversely, biota have evolved with fire. As noted by Howell, fire promotes reproduction and the growth of native species absent from unburned areas. Arno and Fiedler describe the use of prescribed fire, but in practice this often differs considerably from nature's fire by consisting of pile burning or light burning that fails to provide the same timing, heating requirements, variability and intensity. Conversely, much of what occurs inside the perimeter of many fires is ecologically beneficial and restorative, but Arno and Fiedler characterize most fires today as detrimental. However, they do describe examples of restoration resulting from management approaches that allow fires to burn more area.

Thus, the authors have embraced widely varying approaches under restoration forestry. However, they emphasize forestry treatments over process restoration. The book details many benefits of their approach over the intensive forestry of the past, but the focus on timber harvest appears best suited to a forestry audience. Botanist and ecologists with broader interests in understanding the natural role of fire and implications of human impacts to it will likely find Bond and van Wilgen's 1996 classic, *Fire and Plants* more suited to their general interests. Though unfortunately expensive and difficult to obtain, its treatment of fire more comprehensively as an ecological and evolutionary force that has shaped plant diversity throughout the world is fascinating reading. In addition, it is helpful in considering how to manage fire to place the traditional preoccupation with fire suppression and timber harvest in the western US into a broader ecological context this book provides.

*–Dennis Odion, Siskiyou Chapter.*

## *Rocky Mountain Flora*

**by James Ells. 2006. 320 pages, 700 photographs, index. ISBN 0-9760525-4-7; published by Colorado Mountain Club Press/ distributed by The Mountaineers Books. $22.95, paper.**

The author begins with the statement, "This book is as much a surprise to me as to those who know me…". Although I don't know the author, there were some aspects of the book that surprised me as well. At first glance, the book is organized by flower color: the chapters are white, yellow, red, blue, and purple flowers, followed by "flowers of other colors." This is where it becomes puzzling, because the latter chapter includes everything from Russian thistle (*Salsola kali*) through Canadian buffaloberry (*Shepherdia canadensis*) to subalpine fir (*Abies lasiocarpa*), without any attention to life form or conifers vs. flowering plants. The author suggests that this section groups "most of the wind-pollinated plants, including many of the trees." Then, to my surprise, the next two chapters are entitled "Grasses" and "Sedges and Rushes," inferring that these groups are not flowering plants, and differ in some fundamental way from the wind-pollinated species in the previous chapter. Then, even more puzzling, the final chapters are "Mushrooms," "Ferns and Fern-like Plants," "Lichens," and "Mosses."

There is another peculiar feature in this book: the life list. I have previously encountered this phenomenon only among birders, but suppose it might be useful for botanists. In addition to a box to check next to each species, several pages at the back of the book are dedicated to a "life list" with blanks for Flora Name, Location, Date and Elevation. At first I thought that he meant the name of the flora used to key the plant, but then realized that this blank is for the name of the plant observed.

To his credit, the author tried to include both a habit photo and insets that show details of diagnostic features. However, this objective was not always met (especially among the grasses and ferns) and photo quality is all over the map. Some are sharp and show the entire plant and a close-up of leaves, flowers or fruits. Others leave me struggling to recognize a plant that I know well.

Like many other color wildflower books, there are no keys and one identifies the plant by looking through all the flowers of similar color. Normally I refuse to use wildflower picture books because I never know whether the plant at hand is in the book or just superficially resembles one of the photos. However, the author insists that what sets his book apart is that it includes "more than 90% of the plants one would encounter in any of the parks, forests or trails in the Rocky Mountains" and he has hiked for miles without finding any plants not in the book. If that is true, then the flora might be worth carrying in one's pack, despite its weight at over 1¼ lbs. However, in my opinion, a better choice for a guide to pack is *Plants of the Rocky Mountains* by Kershaw, MacKinnon and Pojar. It has better photographs, descriptions, keys, wider coverage and its organization makes it easier to use.

*–Cindy Roché, Siskiyou Chapter.*

## *Oregon's Best Wildflower Hikes Southwest Region*

**by Elizabeth L. Horn. 2006. 248 pages, 150 color photographs, maps, index. ISBN 1-56579-533-4; Westcliffe Publishers. $19.95, paper.**

Beth Horn has published two articles in *Kalmiopsis* during my tenure as editor and I am delighted that she has completed a book of wildflower hikes in southwestern Oregon. A number of NPSO members contributed to its preparation and she acknowledges these individuals near the front of the book.

The 50 hikes she selected are grouped in five subregions: Coast, Siskiyou Mountains/Interior Valleys, Western Cascades, and High Cascades. The geographic range extends from the California line north to Heceta Head on the coast and Black Butte northwest of Sisters in the Cascade Range; the crest of the Cascades forms the eastern boundary. Hikes are on public land and the following information is provided for each: location, difficulty rating, length, elevation (highest and lowest point), bloom season, peak bloom, agency contact, directions from a nearby community, GPS coordinates for the trailhead, a map and description of the trail and the most common and showy wildflowers. She uses common names for the flowers, in bold type, but one can easily reference the scientific names in a list in Appendix A. This method greatly reduces the clutter and improves the flow of the narrative. Each hike is accompanied by an in-depth profile of a species that Beth found to best represent the area during the peak bloom season. Her photographs are uniformly excellent for identification: important features are shown, the plant is in focus, and the background blurred so that the subject stands out. The narratives provide good description of the locations and habitats as well as attributes of the flowers in each area. It is clear that Beth has hiked every one of the trails she describes in the book. I expect to see this book pulled out of packs on many NPSO hikes. Both novice and veteran wildflower enthusiasts will find it useful.

*–Cindy Roché, Siskiyou Chapter.*

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Members of the Native Plant Society of Oregon and others are invited to submit articles, book reviews, artwork, and photographs for publication in *Kalmiopsis*. All materials submitted should pertain to Oregon's native vegetation and flora. Acceptance will be based on suitability (articles dealing with formal nomenclatural proposals or of a highly technical nature are not acceptable). *Kalmiopsis* publishes two series articles: *Plant of the Year*, and *Oregon Plants, Oregon Places*. We also publish articles about botanical history and features related to native plants or plant communities in Oregon.

Please consider that the readers of *Kalmiopsis* are people with varied educational backgrounds and all articles must be comprehensible to a broad, but relatively well educated, audience. The goals of *Kalmiopsis* are to disseminate correct information about and generate interest in native plants, thus each article is reviewed by the editorial board and selected technical reviewers before publication.

Contributions of artwork and photographs without accompanying manuscripts are welcome; color submissions must be suitable for publication in grayscale. Contact the *Kalmiopsis* editor to request a copy of Instructions to Authors, or to inquire about the suitability of an idea for an article.

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Membership in the Native Plant Society of Oregon is open to all.
Membership applications, renewals, and changes of address (include old address and zip code) should be sent to the NPSO Membership Chair, Clayton Gautier, 3927 Shasta View St., Eugene OR 97405-4442.
Student $12; Regular $18; Family $24;
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